



REVISED REVENUE FORECAST MEMO

DATE: January 24th, 2023

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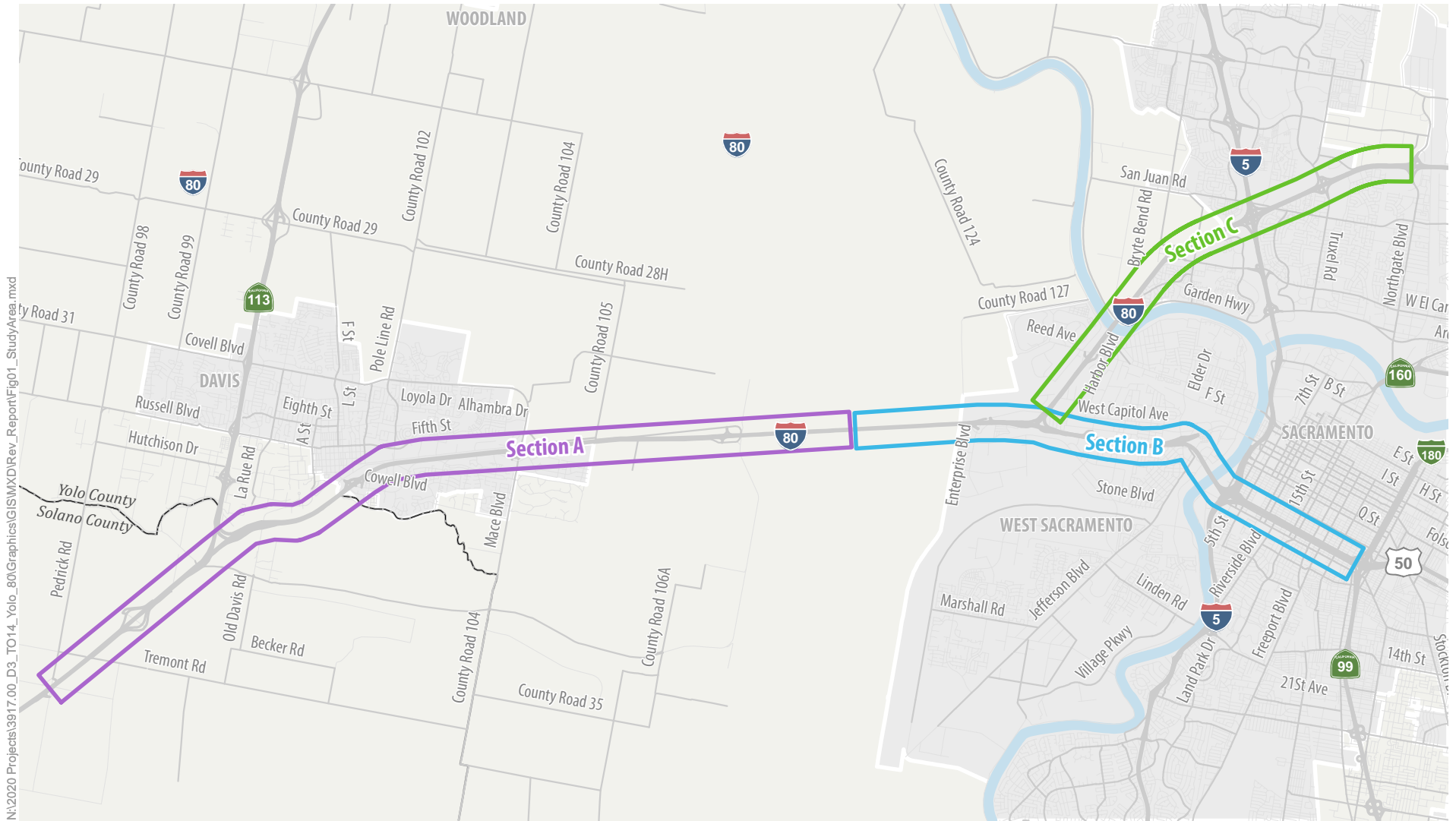
SUBJECT: Interstate 80/US Highway 50 Managed Lanes Project Project # 21095-015

INTRODUCTION

The I-80 and US 50 corridors experience high travel demand, especially during peak commute periods and weekends. This demand has created severe traffic congestion and impaired mobility along these routes. The Yolo 80 managed lane project proposes to improve freeway operations along I-80 and US 50 in Yolo County by constructing a managed lane. The project area covers I-80 from just west of the Solano/Yolo County line near Davis to just west of West El Camino Avenue in Sacramento County and US 50 from I-80 in West Sacramento to just east of I-5 in Sacramento. **Figure 1** presents the project study area. The managed lane alternatives range from the provision of High Occupancy Vehicle (HOV) lanes, 2+ or 3+ High Occupancy Toll (HOT) lanes, Express lanes (EL), transit-only lanes, and conversion of GP to HOV lanes.

The traffic and revenue forecasts for a typical weekday were presented previously in the *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report*¹ (Appendix A). This memo describes the approach and analysis to determine the potential weekend revenue forecasts for the project opening year (2029) and the design year (2049). The memo also includes the revenue forecasts for Phase I of the Project and revised Operation and Maintenance (O&M) costs.

¹ Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report, November 2021, Fehr & Peers



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Figure 1
Study Area

PROJECT ALTERNATIVES

The alternatives for the I-80/US 50 Managed Lanes Project are described below. Alternatives highlighted in bold italics are the tolled options.

- Alternative 1 – No build
- Alternative 2 – Add one high occupancy vehicle (HOV) lane in each direction
- ***Alternative 3 – Add one high occupancy toll (HOT) lane in each direction where vehicles with two or more occupants (2+) are free, but single-occupant vehicles pay the full toll (HOT2+)***
- ***Alternative 4 – Add one HOT lane in each direction where vehicles with three or more occupants (3+) are free, but vehicles with two occupants pay a reduced toll, and single-occupant vehicles pay the full toll (HOT3+)***
- ***Alternative 5 – Add one express toll lane in each direction (everyone pays)***
- Alternative 6 – Add one transit lane in each direction
- Alternative 7 – Convert the current left lane to HOV
- Alternative 8 – Add one HOV lane in each direction with HOV to HOV median connector ramps

All toll alternatives include one managed lane per direction, constructed in the median of I-80 from the Solano/Yolo County line eastward and continuing along US 50 in West Sacramento to connect with the HOV lanes currently under construction in downtown Sacramento (Sections A and B in Figure 1). Also, managed lanes would be added in the median of I-80 from US 50 eastward, across the Sacramento River, to connect with the existing HOV lanes in Sacramento County (Section C).

Table 1 explains the toll treatment for each vehicle type that can use the tolled lanes.

TABLE 1: TOLLED LANE ACCESS AND PRICE TREATMENT IN PROJECT AREA DURING TOLL PERIOD

| ALTERNATIVE | SOV | TRUCKS | HOV2 | HOV3+ | TRANSIT |
|----------------------------------|------|-------------|-----------|-------|---------|
| ALTERNATIVE 3 (ADD HOT2+) | Toll | Double Toll | Free | Free | Free |
| ALTERNATIVE 4 (ADD HOT3+) | Toll | Double Toll | Half Toll | Free | Free |
| ALTERNATIVE 5 (ADD TOLL) | Toll | Double Toll | Toll | Toll | Free |

Note: Outside the tolled period (7 AM to 8 PM), all passenger vehicles may use the managed lane for free.

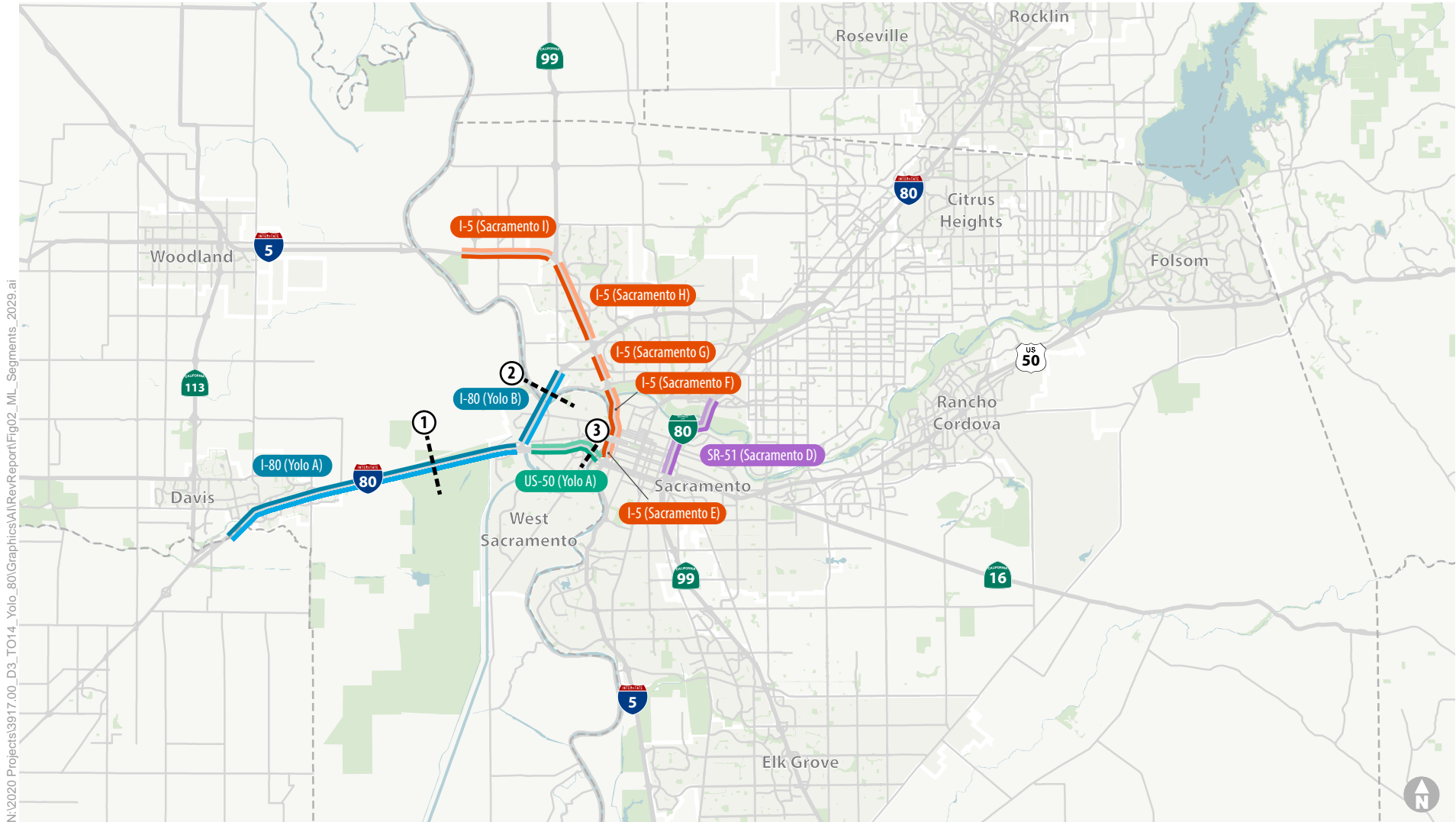
Trucks are limited to two-axle commercial vehicles.

Source: Fehr & Peers (2021)

In Alternative 3 (Add HOT2+), access to the managed lane would be restricted to vehicles with two or more occupants, single-occupant vehicles (SOVs) that pay a full toll, and trucks that pay a double toll. Under all alternatives, drivers would be allowed to enter and exit continuously along the corridor. In Alternative 4 (Add HOT3+), access to the managed lane would be restricted to vehicles with three

or more occupants, vehicles with two occupants that pay a half toll, SOVs that pay a full toll, and trucks that pay a double toll. In Alternative 5 (Add Toll), access to the managed lane would be restricted to all vehicles that pay a full toll.

The tolled alternatives would be part of a larger regional managed lane network developed by Caltrans and the Sacramento Area Council of Governments (SACOG) as part of the 2020 MTP/SCS. For this study, Caltrans has identified the tolled lane configurations for the regional managed lanes network, as shown in **Figure 2** and **Figure 3**. In the Year 2029, the transition areas between HOV and HOT were not assumed but may be needed, which could impact actual revenue collected. The regionally managed lane network assumption is consistent with other managed lane T&R studies in the Sacramento region.



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Corridor Segment Locations

- I-5
- SR-51/SR-99
- I-80
- US-50

- X-0 (XX X) Corridor Segment ID
- County Line

Screenlines

- ① I-80 at Yolo Causeway
- ② I-80 at Sacramento River
- ③ US 50 at Sacramento River



Figure 2
Managed Lanes Segments - 2029 Conditions



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Corridor Segment Locations

- I-5
- I-80
- SR-51/SR-99
- US-50

- X-0 (XX X) Corridor Segment ID
- County Line

Screenlines

- ① I-80 at Yolo Causeway
- ② I-80 at Sacramento River
- ③ US 50 at Sacramento River



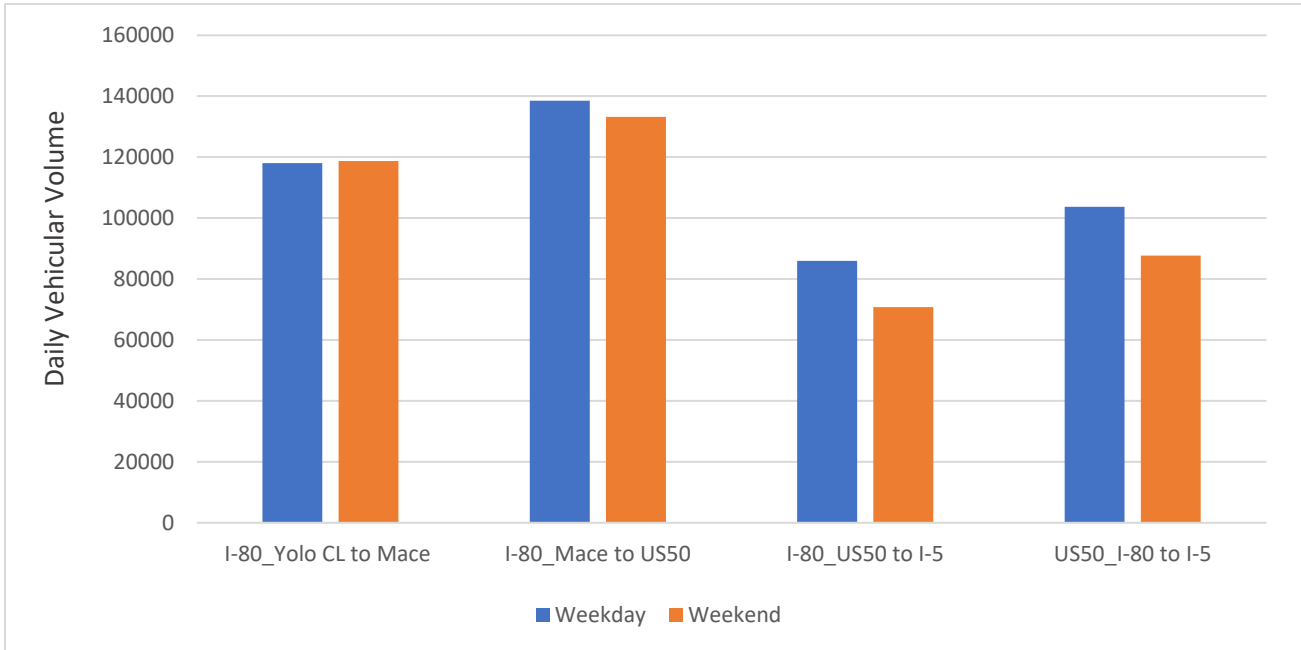
Figure 3
Managed Lanes Segments - 2049 Conditions

WEEKEND REVENUE FORECASTS

The weekday traffic and revenue forecast approach, pricing objectives, toll operations assumptions, and the analysis are discussed in the *Interstate 80/US Highway 50 Managed Lanes Traffic and Revenue Report*. The traffic and revenue forecasts were developed using a modified version of the SACSIM19 activity-based travel demand model and toll module application. However, the SACSIM19 is a weekday model and does not model weekend travel. The weekend revenue is estimated based on the methodology described below.

In simple terms, toll revenues are a function of toll road traffic volumes, congestion/travel time savings, and toll rates. The weekend revenue factors were estimates based on factoring average weekday and weekend volumes and speeds. For the purpose of this study, the Value of Time (VOT) and the toll rates on weekends are assumed to be the same as for weekdays.

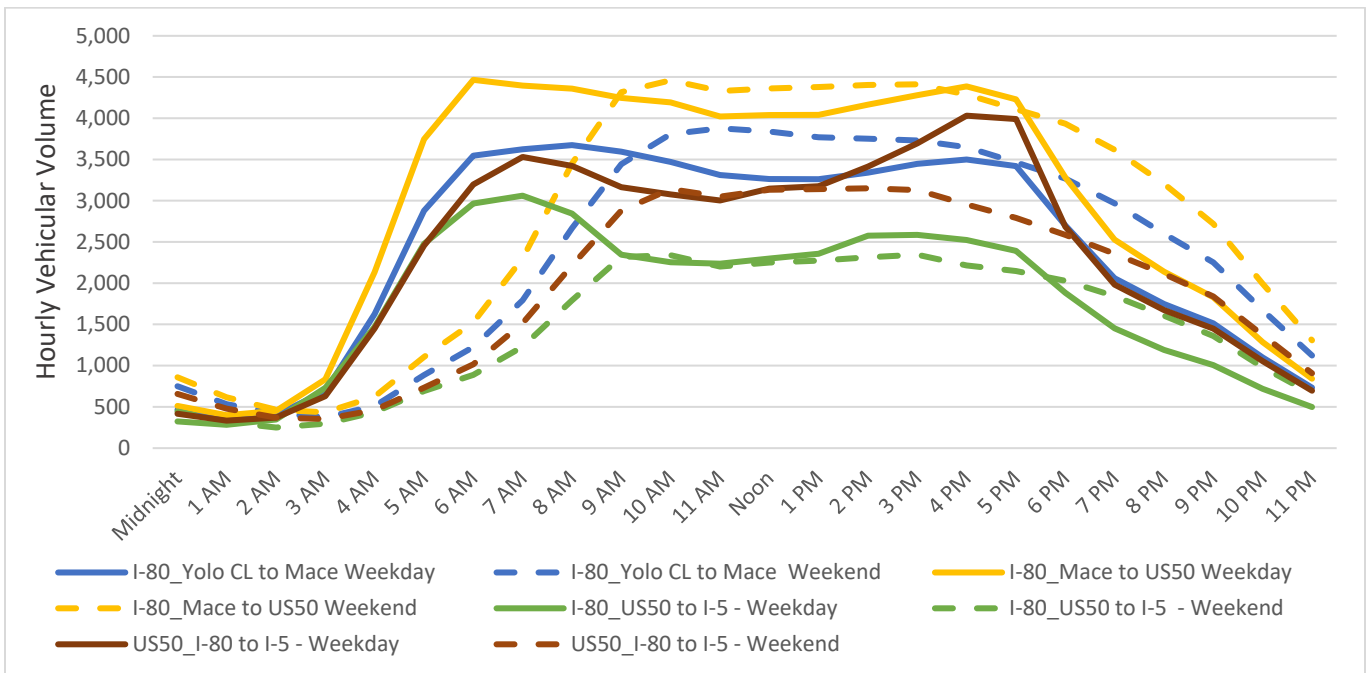
The average hourly volumes for weekdays and weekends were obtained from the Caltrans Performance Measurement System (PeMS) data by direction for multiple locations along the study corridor. The data was collected during fall 2022 and spring 2023. Only the Vehicle Detection Stations (VDS) stations with detector health of more than 85% were used for the analysis. **Figure 4** presents the average weekday and weekend daily volumes at various locations along the study corridor. The weekend traffic is observed to be similar to the weekday traffic along the study corridor between Yolo County Line and US 50 and about 15% to 18% lower along I-80, between US 50 and I-5, and on US 50, between I-80 and I-5. The count information indicates significant traffic on the weekend along the study corridor, most likely due to the intercity recreational traffic on I-80. It should be noted that the average weekend volumes do not capture the peak weekend and holiday conditions, which can be much higher than weekday conditions.



Source: DKS (2023)

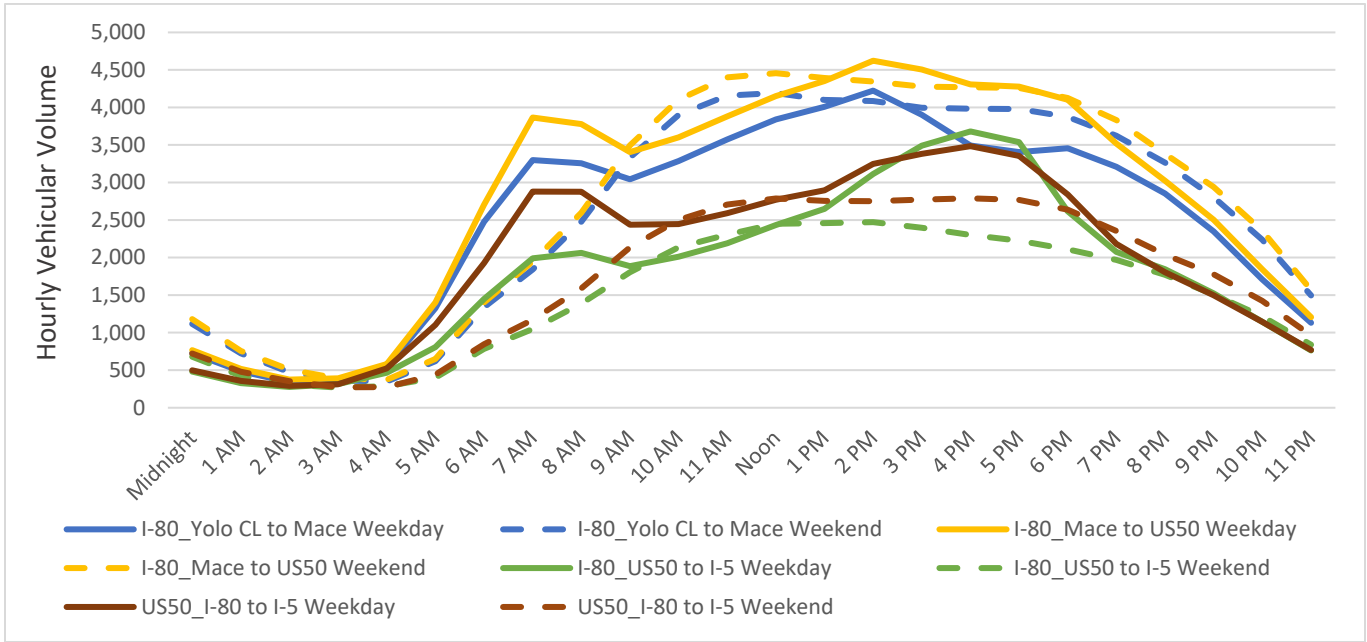
FIGURE 4: DAILY AVERAGE WEEKDAY AND WEEKEND VOLUMES

Figure 5 and Figure 6 present the time of day variation for the average weekday and weekend volumes at various locations along the corridor. Compared to weekdays, the weekend traffic volumes tend to be lower in the morning and generally higher in the midday and the evening. It should be noted that the weekday evening volumes are constrained by various bottlenecks along the corridor, thereby limiting vehicle throughput.



Source: Caltrans PeMS

FIGURE 5: AVERAGE WEEKDAY AND WEEKEND TRAFFIC TREND BY TIME OF DAY - WESTBOUND



Source: Caltrans PeMS

FIGURE 6: AVERAGE WEEKDAY AND WEEKEND TRAFFIC TREND BY TIME OF DAY - EASTBOUND

The hourly speed for average weekdays and weekends was obtained from INRIX data. **Figure 7** shows the average weekday and weekend hourly speed profile based on data from spring 2023. The weekend speed profile shows uncongested speeds in the morning, consistent with the volume trend, and lower speeds in the afternoon and evening.

| Segment | WEEKDAY | | | | | | | | | | | | WEEKEND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------|------|------|------|------|------|------|------|------|------|-------|-------|---------|------|------|------|------|------|------|------|------|------|-------|-------|----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|-------|-------|----|
| | Midnight | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | Midnight | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | |
| Westbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I-80_Yolo CL to Mace | 67 | 64 | 64 | 67 | 71 | 70 | 68 | 68 | 68 | 67 | 68 | 68 | 69 | 69 | 69 | 69 | 70 | 70 | 71 | 70 | 70 | 70 | 69 | 67 | 67 | 61 | 68 | 68 | 67 | 69 | 70 | 71 | 71 | 71 | 69 | 65 | 63 | 69 | 69 | 66 | 69 | 69 | 66 | 69 | 70 | 71 | 70 | | |
| I-80_Mace to US50 | 66 | 64 | 64 | 67 | 71 | 69 | 56 | 42 | 38 | 37 | 42 | 54 | 64 | 66 | 66 | 64 | 60 | 55 | 69 | 70 | 70 | 70 | 69 | 68 | 69 | 68 | 68 | 67 | 69 | 70 | 71 | 68 | 54 | 50 | 36 | 32 | 38 | 44 | 44 | 42 | 38 | 44 | 50 | 54 | 61 | 69 | 70 | 70 | |
| I-80_US50 to I-5 | 66 | 63 | 66 | 69 | 70 | 70 | 61 | 38 | 29 | 30 | 35 | 53 | 67 | 67 | 67 | 67 | 64 | 69 | 69 | 69 | 69 | 68 | 67 | 68 | 66 | 66 | 66 | 65 | 68 | 69 | 70 | 70 | 49 | 30 | 26 | 33 | 39 | 41 | 35 | 33 | 42 | 47 | 55 | 61 | 69 | 69 | 69 | | |
| US50_I-80 to I-5 | 62 | 61 | 61 | 66 | 69 | 69 | 67 | 64 | 58 | 56 | 60 | 65 | 66 | 66 | 65 | 64 | 61 | 62 | 66 | 68 | 67 | 67 | 67 | 65 | 67 | 65 | 66 | 65 | 67 | 68 | 69 | 70 | 69 | 65 | 47 | 48 | 57 | 65 | 67 | 64 | 64 | 67 | 67 | 68 | 67 | 68 | 68 | 68 | |
| Eastbound | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I-80_Yolo CL to Mace | 67 | 67 | 66 | 65 | 67 | 70 | 70 | 69 | 69 | 69 | 69 | 69 | 68 | 67 | 48 | 28 | 21 | 25 | 44 | 68 | 70 | 71 | 71 | 70 | 70 | 70 | 70 | 68 | 67 | 65 | 69 | 71 | 71 | 72 | 71 | 70 | 69 | 67 | 64 | 55 | 45 | 44 | 47 | 51 | 61 | 67 | 70 | 71 | 71 |
| I-80_Mace to US50 | 67 | 67 | 65 | 65 | 67 | 69 | 68 | 65 | 66 | 67 | 67 | 67 | 66 | 65 | 57 | 46 | 36 | 35 | 46 | 66 | 68 | 69 | 71 | 70 | 70 | 70 | 70 | 68 | 67 | 65 | 68 | 71 | 71 | 71 | 69 | 65 | 63 | 63 | 61 | 54 | 54 | 51 | 53 | 56 | 59 | 59 | 66 | 70 | 70 |
| I-80_US50 to I-5 | 67 | 65 | 63 | 64 | 67 | 67 | 66 | 66 | 67 | 67 | 67 | 67 | 66 | 66 | 61 | 51 | 50 | 67 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 67 | 66 | 65 | 66 | 69 | 70 | 70 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 70 | 70 | 70 | 69 | 69 | 70 | 70 |
| US50_I-80 to I-5 | 63 | 63 | 62 | 60 | 62 | 65 | 66 | 62 | 64 | 65 | 65 | 57 | 64 | 52 | 54 | 53 | 55 | 57 | 66 | 55 | 41 | 61 | 66 | 66 | 66 | 66 | 64 | 63 | 60 | 64 | 69 | 69 | 69 | 68 | 65 | 67 | 65 | 55 | 48 | 62 | 67 | 68 | 68 | 69 | 67 | 65 | 67 | 68 | |

Source: INRIX

FIGURE 7: AVERAGE WEEKDAY AND WEEKEND HOURLY SPEED PROFILE

SACSIM19 generates model forecasts for 9 time periods - 7 AM, 8 AM, 9 AM, Midday (10 AM – 3 PM), 3 PM, 4 PM, 5 PM, Evening (6 PM – 8 PM), Night (8 PM – 7 AM). The tolled lane hour of operations is assumed to be 7 AM to 8 PM, aligning with the travel model time-period breakdown. Actual hours of operations may differ for both weekdays and weekends. The average weekday versus weekend volume and speed factors were calculated for each SACSIM19 time period and applied to the weekday gross revenue estimates to calculate a daily weekend revenue factor for each toll alternative. Based

on the toll strategy and weekday revenue estimate, the daily weekday versus weekend revenue factor is different for each alternative.

The factors were further adjusted to account for the change in Average Vehicle Occupancy (AVO) over the weekends. Based on research², higher vehicle occupancy is expected during the weekends due to more recreational trips. The study from the San Francisco Bay Area with detailed information on weekday and weekend mode share information was used to inform the AVO factors for this study. As previously discussed, the VOT and the toll rates on weekend days are assumed to remain the same as on a typical weekday.

PHASE I REVENUE FORECASTS

Phase I of the Project involves constructing a Managed Lane spanning from Richard Boulevard (PM 0.10) to the I-80/US 50 Split (PM 9.66) in the eastbound direction and from the I-80/US50 Split (PM 9.82) to Mace Boulevard (PM 2.88) in the westbound direction. **Figure 8** presents the Phase 1 Project extents.



FIGURE 8: PHASE I PROJECT LIMITS

² An Exploratory Analysis of Weekend Activity Patterns in the San Francisco Bay Area, Lockwood & Bhat, 2004

The I-80 Managed Lane network in the SACSIM model is segmented into eight toll segments, comprising two segments in Yolo County, five segments in Sacramento County, and one segment in Placer County. Phase I aligns closely with toll segment 9 (EB) and toll segment 10 (WB) in the SACSIM model. The revenue forecasts for Phase I on weekdays are derived from the results of the representative SACSIM toll segments. For weekends and annual projections, the methodology outlined in the preceding section is employed to estimate Phase I forecasts.

WEEKEND REVENUE FACTORS

Table 2 and **Table 3** present the weekend revenue factors for each tolled alternative under 2029 and 2049 conditions, respectively. The average weekday and weekend AVO was calculated to be 1.59 and 1.90, respectively. Alternative 3 (HOT2+) daily weekend factor was adjusted by a factor of 0.834 to account for higher vehicle occupancy. Alternative 4 (HOT3+) allows HOV2 travel for free and accounts for a lower adjustment. No adjustments were made for Alternative 5 since all the vehicles are tolled. The study assumptions do not account for potential revenue loss from occupancy violations, including incorrect setting on flex transponders misrepresenting vehicle occupancy levels.

TABLE 2: YEAR 2029 WEEKEND REVENUE FACTORS

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|-------------------------------|-------------------|-------------------|------------------|
| DAILY WEEKEND FACTOR | 0.543 | 0.865 | 0.858 |
| ADJUSTMENT FOR AUTO OCCUPANCY | 0.834 | 0.914 | 1.000 |
| ADJUSTED WEEKEND FACTOR | 0.453 | 0.791 | 0.858 |

Source: DKS (2023)

TABLE 3: YEAR 2049 WEEKEND REVENUE FACTORS

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|-------------------------------|-------------------|-------------------|------------------|
| DAILY WEEKEND FACTOR | 0.512 | 0.858 | 0.848 |
| ADJUSTMENT FOR AUTO OCCUPANCY | 0.834 | 0.914 | 1.000 |
| ADJUSTED WEEKEND FACTOR | 0.427 | 0.785 | 0.848 |

Source: DKS (2023)

FULL BUILDOUT REVENUE FORECASTS

This section presents the gross toll revenue, toll operating and maintenance costs, revenue leakage, and estimated net revenue for the full buildout of the Project.

GROSS TOLL REVENUE

Table 4 and **Table 5** summarize the full buildout gross toll revenue results for each tolled alternative under 2029 and 2049 conditions, respectively. The weekday revenue was derived from the *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report*. All dollar values are reported in 2021 dollars.

The SACSIM model assesses costs and VOT in the year 2000 dollars. All tolls and revenues in this section have been updated to 2021 dollars (an increase of 61 percent over 2000 dollars) using the Consumer Price Index (CPI). Annual revenue assumes 250 tolled weekdays and 115 weekend days and holidays per year.

TABLE 4: 2029 TOLL COST AND GROSS REVENUE (YEAR 2021 DOLLARS) – FULL BUILD

| REVENUE | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|------------------------------------|-------------------|-------------------|------------------|
| WEEKDAY GROSS REVENUE ¹ | \$3,310 | \$39,435 | \$67,821 |
| WEEKEND GROSS REVENUE ² | \$2,998 | \$62,372 | \$116,415 |
| ANNUAL GROSS REVENUE | \$999,907 | \$13,445,117 | \$23,649,105 |

Note: 1- Weekday revenue was obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and is reported as a daily estimate

2- Weekend revenue is reported for Saturday and Sunday combined

3- Values may not add up due to rounding errors

Source: Fehr & Peers (2021) & DKS (2023)

TABLE 5: 2049 TOLL COST AND GROSS REVENUE (YEAR 2021 DOLLARS) – FULL BUILD

| REVENUE | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|------------------------------------|-------------------|-------------------|------------------|
| WEEKDAY GROSS REVENUE ¹ | \$4,016 | \$60,151 | \$104,307 |
| WEEKEND GROSS REVENUE ² | \$3,428 | \$94,385 | \$176,998 |
| ANNUAL GROSS REVENUE | \$1,201,138 | \$20,464,865 | \$36,254,161 |

Note: 1- Weekday revenue was obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and is reported as a daily estimate

2- Weekend revenue is reported for Saturday and Sunday combined

3 - Values may not add up due to rounding errors

Source: Fehr & Peers (2021) & DKS (2023)

ANNUAL NET OPERATING TOLL REVENUE

Tables 6 and **Table 7** present the forecasted annual net operating toll revenue for the full buildout of the Project under 2029 and 2049 conditions, respectively. It should be noted that these forecasts do not include other major costs, such as the start-up costs of establishing a toll agency or the capital civil construction and toll collection equipment costs of implementing the priced lanes. For the opening year in 2029, an additional 10% reduction in transactions and revenue should be considered to account for ramp-up.

The Toll Operating and Maintenance (O&M) costs and the revenue leakage percentage are detailed in the *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report*. For this study, the average O&M lane mile cost of \$231,000 (2021 dollars) was assumed. The total I-80/US 50 Managed Lanes corridor length subject to tolling is 34.5 lane-miles. Based on the average per lane-mile O&M cost, the total annual O&M cost for a full buildout is estimated to be \$7,969,500. In general, the O&M costs can be broadly categorized into roadside equipment, back-office processing costs, agency administrative costs, and facility maintenance costs. While some O&M costs are expected to rise due to increased toll operating hours on weekends, most systemwide costs are anticipated to be fixed. In this study, a 10% increase in O&M costs for extending toll operations to weekends is assumed, and the O&M costs in Tables 6 and 7 are updated to reflect this increase.

The O&M costs are partially associated with the number of transactions, which are expected to go up in the future. Transaction-related costs can vary based on factors like the complexity of toll collection technology, the efficiency of transaction processing systems, and the level of automation in toll collection processes. SACSIM daily demand forecasts indicate a projected growth of Managed Lane volumes by approximately 8% to 14% between 2029 and 2049, depending on the toll alternative. To manage the expected rise in toll transactions, a 5% adjustment to the O&M costs was made in 2049. This adjustment assumed that back-office costs related to toll transactions constitute 50% of total O&M costs.

TABLE 6: 2029 ANNUAL NET OPERATING TOLL REVENUE (YEAR 2021 DOLLARS) – FULL BUILD

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|--|-------------------|-------------------|------------------|
| ANNUAL GROSS REVENUE | \$999,907 | \$13,445,117 | \$23,649,105 |
| ESTIMATED REVENUE LEAKAGE¹ | \$99,991 | \$1,344,512 | \$2,364,910 |
| AVERAGE ANNUAL O&M COST² | \$8,766,450 | \$8,766,450 | \$8,766,450 |
| NET OPERATING TOLL REVENUE³ | (\$7,866,534) | \$3,334,156 | \$12,517,744 |

Note: 1- Estimated revenue leakage assumed to be 10% of the annual revenue

2 - O&M costs obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and increased by 10% to account for increased hours of operation

3 – Net operating toll revenue based on average O&M costs

4 – Values may not add up due to rounding errors

TABLE 7: 2049 ANNUAL NET OPERATING TOLL REVENUE (YEAR 2021 DOLLARS) – FULL BUILD

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|---|-------------------|-------------------|------------------|
| ANNUAL GROSS REVENUE | \$1,201,138 | \$20,464,865 | \$36,254,161 |
| ESTIMATED REVENUE LEAKAGE ¹ | \$120,114 | \$2,046,486 | \$3,625,416 |
| AVERAGE ANNUAL O&M COST ^{2,3} | \$9,164,925 | \$9,164,925 | \$9,164,925 |
| NET OPERATING TOLL REVENUE ⁴ | (\$8,083,901) | \$9,253,453 | \$23,463,820 |

Note: 1- Estimated revenue leakage assumed to be 10% of the annual revenue

2 - O&M costs obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* increased by 10% to account for increased hours of operation

3 – O&M costs increased by 5% to account for increased toll transactions

4 – Net operating toll revenue based on average O&M costs

5 – Values may not add up due to rounding errors

In 2029, the I-80/US 50 Managed Lanes would operate at a net loss in Alternative 3 (Add HOT2+). A positive net revenue is forecasted for Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll). Alternative 5 would provide the highest net operating toll revenue of over \$12.5 million annually in 2029, considering that all vehicles would be tolled. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

In 2049, the I-80/US 50 Managed Lanes would continue to operate at a net loss in Alternative 3 (Add HOT2+) and with positive net revenue in Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll). Alternative 5 would continue to provide the highest net operating toll revenue of approximately \$23.5 million annually in 2049. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

PHASE I REVENUE FORECASTS

This section presents the weekday, weekend, and annual revenue forecasts for Phase I of the Project. The toll operating and maintenance cost, revenue leakage, and resulting net revenue are also reported for the Project toll alternatives.

PHASE I - GROSS TOLL REVENUE

Table 8 and **Table 9** summarize gross toll revenue results for each tolled alternative under 2029 and 2049 conditions, respectively. All dollar values are reported in 2021 dollars. The SACSIM model assesses costs and VOT in the year 2000 dollars. All tolls and revenues in this section have been updated to 2021 dollars (an increase of 61 percent over 2000 dollars) using the Consumer Price Index (CPI). Annual revenue assumes 250 tolled weekdays and 115 weekend days and holidays per year.

Phase I of the Project generates about 69 % - 83 % of the full buildout gross revenue. While Phase I covers a little over 50 % of the full Project lane miles, it addresses the most congested section of the Project on Yolo Causeway. The GP lane congestion in the Phase I section results in higher Managed Lane usage and high average toll cost compared to the rest of the Project sections under 2029 and 2049 conditions.

TABLE 8: 2029 TOLL COST AND GROSS REVENUE (YEAR 2021 DOLLARS) – PHASE I

| REVENUE | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|------------------------------------|-------------------|-------------------|------------------|
| WEEKDAY GROSS REVENUE ¹ | \$2,288 | \$32,022 | \$56,452 |
| WEEKEND GROSS REVENUE ² | \$2,073 | \$50,647 | \$96,900 |
| ANNUAL GROSS REVENUE | \$691,198 | \$10,917,701 | \$19,684,748 |

Note: 1- Weekday revenue was obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and is reported as a daily estimate

2- Weekend revenue is reported for Saturday and Sunday combined

3- Values may not add up due to rounding errors

Source: Fehr & Peers (2021) & DKS (2023)

TABLE 9: 2049 TOLL COST AND GROSS REVENUE (YEAR 2021 DOLLARS) – PHASE I

| REVENUE | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|------------------------------------|-------------------|-------------------|------------------|
| WEEKDAY GROSS REVENUE ¹ | \$2,776 | \$48,084 | \$82,815 |
| WEEKEND GROSS REVENUE ² | \$2,370 | \$75,450 | \$140,529 |
| ANNUAL GROSS REVENUE | \$830,302 | \$16,359,372 | \$28,784,150 |

Note: 1- Weekday revenue was obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and is reported as a daily estimate

2- Weekend revenue is reported for Saturday and Sunday combined

3 - Values may not add up due to rounding errors

Source: Fehr & Peers (2021) & DKS (2023)

PHASE I - ANNUAL NET OPERATING TOLL REVENUE

Tables 10 and **Table 11** present the forecasted annual net operating toll revenue for each alternative under 2029 and 2049 conditions, respectively. The forecasts do not include other major costs, such as the start-up costs of establishing a toll agency or the capital civil construction and toll collection equipment costs of implementing the priced lanes. For the opening year in 2029, an additional 10% reduction in transactions and revenue should be considered to account for ramp-up.

The Toll Operating and Maintenance (O&M) costs and the revenue leakage percentage are detailed in the *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report*. For this study, the average O&M lane mile cost of \$231,000 (2021 dollars) was assumed. The total I-80/US 50 Managed Lanes corridor length subject to tolling is 18.7 lane-miles. Based on the average per lane-mile O&M cost, the total annual O&M cost for Phase I is estimated to be \$4,260,500. In general, the O&M costs can be broadly categorized into roadside equipment, back-office processing costs, agency administrative costs, and facility maintenance costs. While some O&M costs are expected to rise due to increased toll operating hours on weekends, most systemwide costs are anticipated to be fixed. In this study, a 10% increase in O&M costs for extending toll operations to weekends is assumed, and the O&M costs in Tables 10 and 11 are updated to reflect this increase.

The O&M costs are partially associated with the number of transactions, which are expected to go up in the future. Transaction-related costs can vary based on factors like the complexity of toll collection technology, the efficiency of transaction processing systems, and the level of automation in toll collection processes. SACSIM daily demand forecasts indicate a projected growth of Managed Lane volumes by approximately 8% to 14% between 2029 and 2049, depending on the toll alternative. To manage the expected rise in toll transactions, a 5% adjustment to the O&M costs was made in 2049. This adjustment assumed that back-office costs related to toll transactions constitute 50% of total O&M costs.

TABLE 10: 2029 ANNUAL NET OPERATING TOLL REVENUE (YEAR 2021 DOLLARS) – PHASE I

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|---|-------------------|-------------------|------------------|
| ANNUAL GROSS REVENUE | \$691,198 | \$10,917,701 | \$19,684,748 |
| ESTIMATED REVENUE LEAKAGE ¹ | \$69,120 | \$1,091,770 | \$1,968,475 |
| AVERAGE ANNUAL O&M COST ² | \$4,733,883 | \$4,733,883 | \$4,733,883 |
| NET OPERATING TOLL REVENUE ³ | (\$4,111,804) | \$5,092,048 | \$12,982,390 |

Note: 1- Estimated revenue leakage assumed to be 10% of the annual revenue

2 - O&M costs obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* and increased by 10% to account for increased hours of operation. Adjusted for lane miles in Phase I

3 – Net operating toll revenue based on average O&M costs

4 – Values may not add up due to rounding errors

TABLE 11: 2049 ANNUAL NET OPERATING TOLL REVENUE (YEAR 2021 DOLLARS) – PHASE I

| SUMMARY | ALT 3 (ADD HOT2+) | ALT 4 (ADD HOT3+) | ALT 5 (ADD TOLL) |
|---|-------------------|-------------------|------------------|
| ANNUAL GROSS REVENUE | \$830,302 | \$16,359,372 | \$28,784,150 |
| ESTIMATED REVENUE LEAKAGE ¹ | \$83,030 | \$1,635,937 | \$2,878,415 |
| AVERAGE ANNUAL O&M COST ² | \$4,949,060 | \$4,949,060 | \$4,949,060 |
| NET OPERATING TOLL REVENUE ³ | (\$4,201,788) | \$9,774,375 | \$20,956,676 |

Note: 1- Estimated revenue leakage assumed to be 10% of the annual revenue

2 - O&M costs obtained from *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report* increased by 10% to account for increased hours of operation. Adjusted for lane miles in Phase I

3 – O&M costs increased by 5 % to account for increased toll transactions

4 – Net operating toll revenue based on average O&M costs

In 2029, the I-80/US 50 Managed Lanes Phase I would operate at a net loss in Alternative 3 (Add HOT2+). A positive net revenue is forecasted for Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll). Alternative 5 would provide the highest net operating toll revenue of almost \$12.9 million annually in 2029, considering that all vehicles would be tolled. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

In 2049, the I-80/US 50 Managed Lanes would continue to operate at a net loss in Alternative 3 (Add HOT2+) and with positive net revenue in Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll). Alternative 5 would continue to provide the highest net operating toll revenue of approximately \$20.9 million annually in 2049. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

SUMMARY OF TOLL FORECASTS

This study provides a planning-level forecast of the weekend and annual revenue estimates associated with each of the tolled alternatives proposed as part of the I-80/US Managed Lanes Project. More detailed investment-grade revenue studies would be necessary to accurately assess system revenue, including a more detailed design of the managed lane access points and toll collection schemes. The following items summarize key findings associated with the toll forecasts. The findings are consistent with the summary presented in the *Interstate 80/US Highway 50 Managed Lanes Project Traffic and Revenue Report*.

- The SACSIM19 model used for weekday revenue estimates has limitations that affect the travel demand forecasts used in the revenue forecasts. SACSIM19 is a weekday model and does not estimate weekend demand and toll revenues.

- Alternative 3 (Add HOT2+) results in negative net revenues in 2029 and 2049 due to the high demand by HOVs filling the managed lane and limiting the capacity available for toll-paying SOVs.
- Alternative 4 (Add HOT3+) results in positive net revenues in 2029 and 2049 as more vehicles are tolled.
- Alternative 5 (Add Toll) results in positive and highest net toll revenues in 2029 and 2049. However, under Alternative 5, restricting the managed lane to tolled vehicles would restrict vehicles served, and persons served along the corridor, compared to other alternatives.
- Phase I of the Project generates about 69 % - 83 % of the full buildout gross revenue. While Phase I covers a little over 50 % of the full Project lane miles, it addresses the most congested section of the Project on Yolo Causeway. The O&M costs are estimated per lane mile and are about 54 % of the full Project, resulting in a higher net revenue compared to the full buildout. In 2029, Phase I is projected to yield higher net revenue compared to the entire Project under Alternative 4 and Alternative 5. By 2049, Phase I is anticipated to generate approximately equivalent net revenue as the complete Project under Alternative 4 and around 90% of the revenue under Alternative 5.

APPENDIX A

INTERSTATE 80/US HIGHWAY 50 MANAGED LANES PROJECT TRAFFIC AND REVENUE REPORT

Interstate 80/U.S. Highway 50 Managed Lanes Traffic and Revenue Report



Prepared for:



November 2021



Traffic and Revenue Report

Interstate 80 / U.S. Highway 50
Managed Lanes

04-SOL-80 PM 40.91, 03-YOL PM VAR,
and 03-SAC-80/50 PM VAR

EA 03-3H9000
Project ID 03 1800 0085

November 2021

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1. Introduction

This traffic and revenue report was prepared for the Interstate 80 (I-80)/U. S. Highway 50 (US 50) Managed Lanes Project in Yolo and Sacramento counties. The introduction describes the study area and provides a brief overview of the project alternatives. Chapters 2 through 7 describe the project toll alternatives and the approach to their analysis to produce traffic and revenue forecasts.

Chapter 2 – Project Toll Alternatives

Chapter 3 – Regional Managed Lane Network

Chapter 4 – Travel Forecasting Methodology

Chapter 5 – Toll Strategies

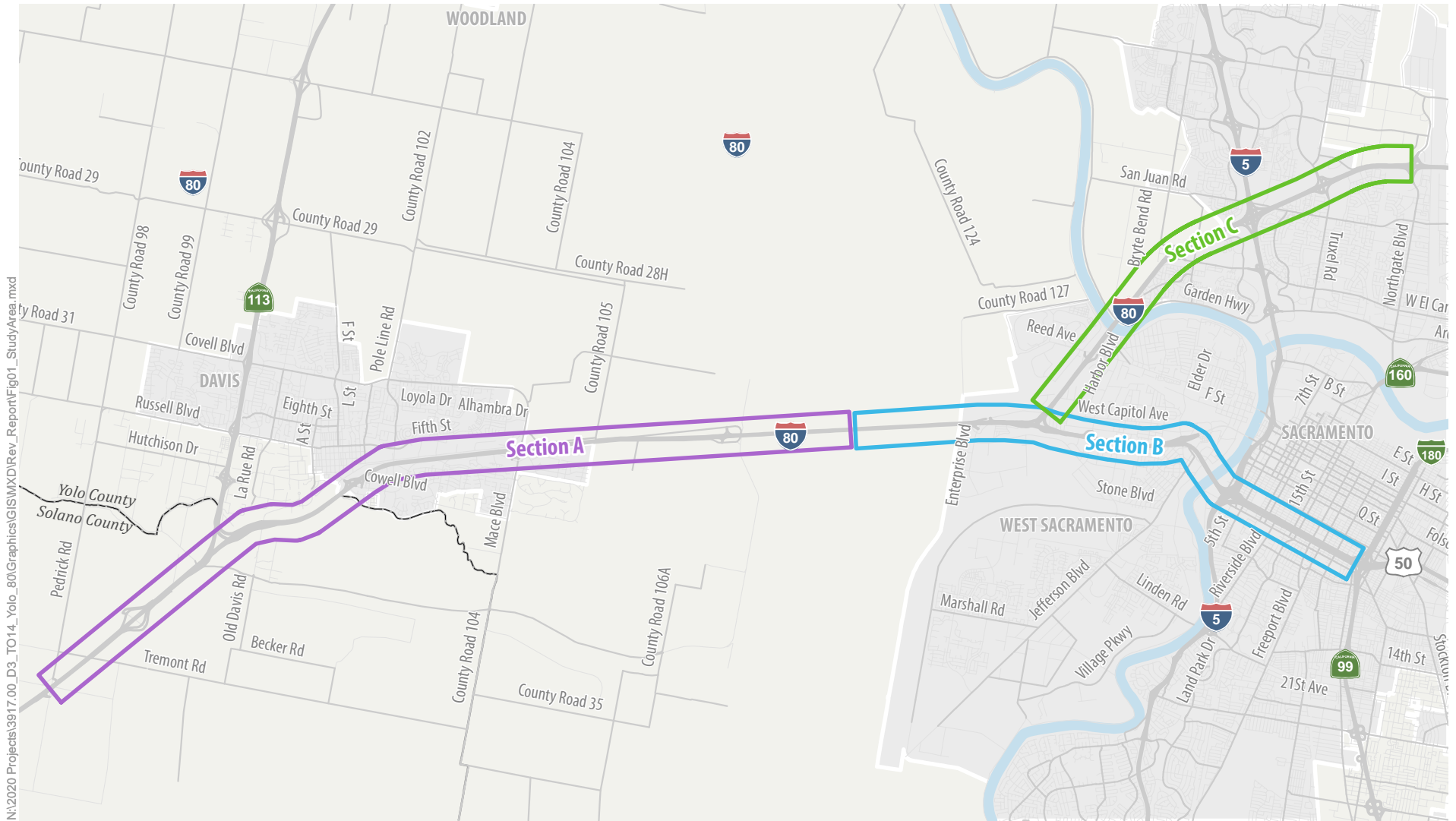
Chapter 6 – Traffic and Revenue Forecasts

Chapter 7 – Summary of Toll Forecasts

1.1 Study Area and Project Description

The project area covers I-80 from just west of the Solano/Yolo County line near Davis to just west of West El Camino Avenue in Sacramento County and US 50 from I-80 in West Sacramento to just east of I-5 in Sacramento. However, the traffic study area extends further west and east to account for changes in travel patterns on adjacent facilities. The study area boundaries are I-80 at Pedrick Road in Solano County in the west and I-80 at Northgate Boulevard in Sacramento and US 50 at State Route (SR) 51/SR 99 in the east (See **Figure 1**).

The I-80 and US 50 corridors experience high travel demand, especially during peak commute periods and weekends. The demand has created severe traffic congestion and impaired mobility along the route. Congestion at various locations, specifically I-80 through Davis and along the Yolo Bypass Causeway between Davis and West Sacramento, can be especially severe and is caused by a combination of high demand, limited alternate routes, and reduced throughput due to lane drops. As part of the few all-weather routes between the San Francisco Bay Area and the Lake Tahoe/Reno region, recreational travel on weekends and holidays can produce some of the longest delays. The congestion impacts travel time reliability for passenger and commercial vehicle travel as well as public transit. In addition, congestion contributes to collisions during peak travel times. The project proposes to improve freeway operations along I-80 and US 50 in Yolo County by widening the freeway and/or providing managed lanes. The project has an opening year of 2029.



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Figure 1
Study Area

1.1.1 Project Alternatives

The alternatives for the I-80/US 50 Managed Lanes Project are described below. Travel demand forecasting models were prepared for the following 10 alternatives. Alternatives highlighted in bold italics are the tolled options.

- Alternative 1 – No build
- Alternative 2 – Add one high occupancy vehicle (HOV) lane in each direction
- ***Alternative 3 – Add one high occupancy toll (HOT) lane in each direction where vehicles with two or more occupants (2+) are free but single occupant vehicles pay the full toll (HOT2+)***
- ***Alternative 4 – Add one HOT lane in each direction where vehicles with three or more occupants (3+) are free but vehicles with two occupants pay a reduced toll and single occupant vehicles pay the full toll (HOT3+)***
- ***Alternative 5 – Add one express toll lane in each direction (everyone pays)***
- Alternative 6 – Add one transit lane in each direction
- Alternative 7 – Convert current left lane to HOV
- Alternative 8 – Add one HOV lane in each direction with HOV to HOV median connector ramps
- Alternative 9 – Add one HOV lane in each direction without Enterprise Crossing
- Alternative 10 – Add one general-purpose (GP) lane in each direction

The project toll alternatives are described in detail below.

2. Project Toll Alternatives

This chapter describes the project’s toll alternatives in more detail. All toll alternatives include one managed lane per direction, constructed in the median of I-80 from the Solano/Yolo County line eastward and continuing along US 50 in West Sacramento to connect with the HOV lanes currently under construction in downtown Sacramento. Also, managed lanes would be added in the median of I-80 from US 50 eastward, across the Sacramento River, to connect with the existing HOV lanes in Sacramento County.

Table 1 explains the toll treatment for each vehicle type that can use the tolled lanes.

Table 1: Tolled Lane Access and Price Treatment in Project Area During Toll Period

| Alternative | SOV | Trucks | HOV2 | HOV3+ | Transit |
|---------------------------|------|-------------|-----------|-------|---------|
| Alternative 3 (Add HOT2+) | Toll | Double Toll | Free | Free | Free |
| Alternative 4 (Add HOT3+) | Toll | Double Toll | Half Toll | Free | Free |
| Alternative 5 (Add Toll) | Toll | Double Toll | Toll | Toll | Free |

Note: Outside the tolled period (7 AM to 8 PM), all passenger vehicles may use the managed lane for free. Trucks are limited to two-axle commercial vehicles.

Source: Fehr & Peers (2021)

2.1.1 Alternative 3 – Add HOT2+

In Alternative 3 (Add HOT2+), access to the managed lane would be restricted to vehicles with two or more occupants, single occupant vehicles (SOVs) that pay a full toll, and trucks that pay a double toll. Drivers would be allowed to enter and exit continuously along the corridor.

2.1.2 Alternative 4 – Add HOT3+

In Alternative 4 (Add HOT3+), access to the managed lane would be restricted to vehicles with three or more occupants, vehicles with two occupants that pay a half toll, SOVs that pay a full toll, and trucks that pay a double toll. Drivers would be allowed to enter and exit continuously along the corridor.

2.1.3 Alternative 5 – Add Toll

In Alternative 5 (Add Toll), access to the managed lane would be restricted to all vehicles that pay a full toll. Drivers would be allowed to enter and exit continuously along the corridor.

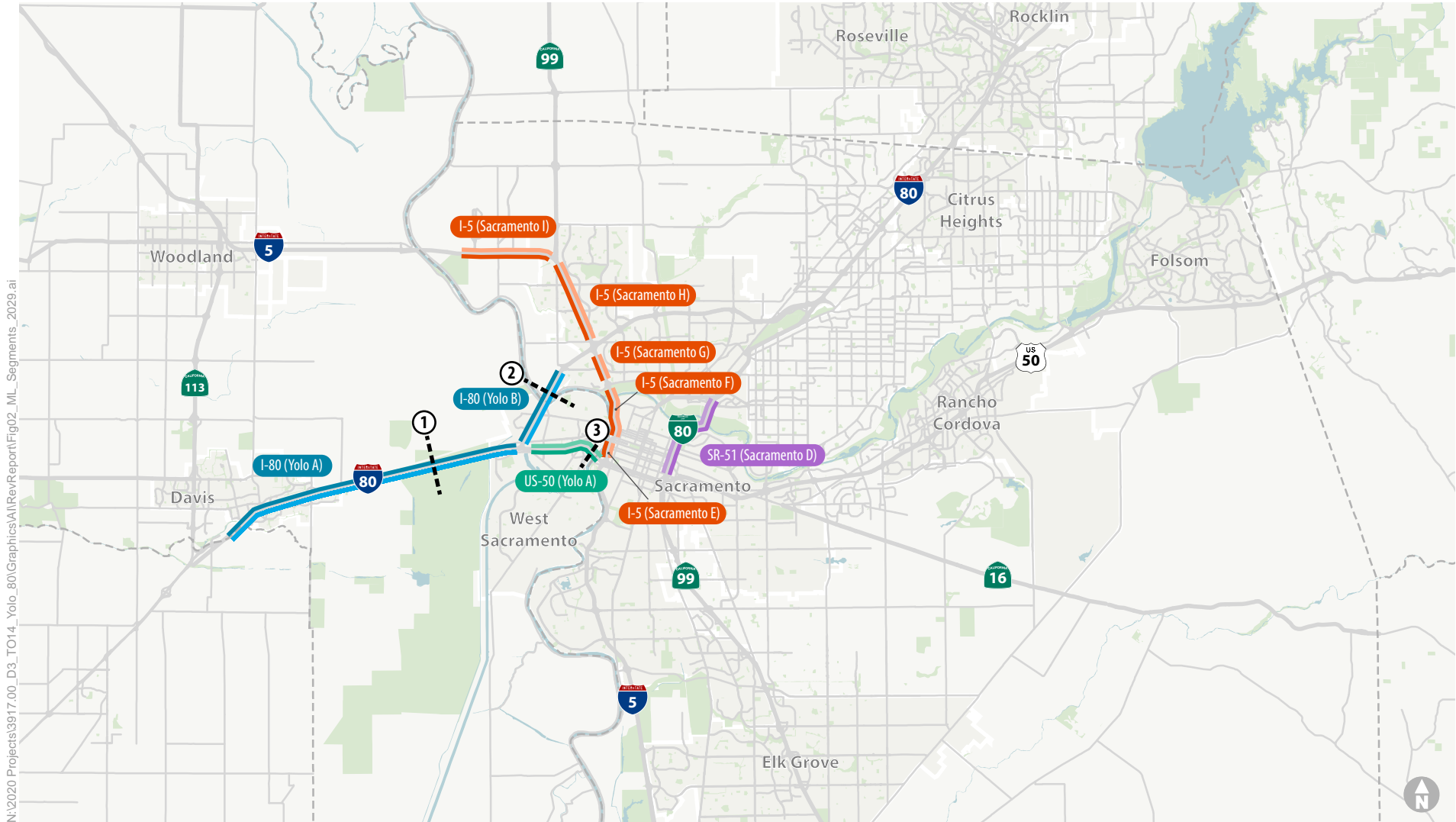
3. Regional Managed Lane Network

The tolled alternatives are part of a larger regional managed lane network developed by Caltrans and the Sacramento Area Council of Governments (SACOG) as part of the 2020 MTP/SCS. The ultimate network includes priced lanes throughout the region, but the development of those lanes has not yet been finalized. For example, some lanes may start as HOV lanes and then transition to HOT or fully tolled as demand and congestion warrant. For this study, Caltrans has identified the tolled lane configurations for the regional managed lanes network as shown in **Figures 2** (2029 Conditions) and **3** (2049 Conditions).

As part of the configurations, each tolled corridor has been divided into analysis segments for modeling purposes as depicted on the figures. Segments are used in the SACSIM toll optimization algorithm as explained in Section 4.1. The original toll segments were developed by SACOG for the 2020 MTP/SCS and then used for the I-5 Managed Lanes Project. The segments are described below.

- I-5 was divided into nine modeled toll segments (five segments north of US 50 and four segments south of US 50, all in Sacramento County). The overall I-5 corridor totals approximately 21.6 miles in each direction.
- I-80 was divided into eight modeled toll segments (two segments in Yolo County, five segments in Sacramento County, and one segment in Placer County). The overall I-80 corridor totals approximately 36 miles in each direction.
- US 50 was divided into 10 modeled toll segments (one in Yolo County and nine in Sacramento County, with one portion extending into El Dorado County). The overall US 50 corridor totals approximately 29 miles in each direction.
- SR 51/SR 99 was divided into four modeled toll segments (one segment representing SR 51 north of US 50 and three segments representing SR 99 south of US 50, all in Sacramento County). The overall SR 51/SR 99 corridor totals approximately 15 miles in each direction.

Per Caltrans, the tolled lanes are modeled with continuous access such that drivers can enter and exit at any point like how existing HOV lanes operate in District 3. The priced lanes configurations are for weekday conditions, which is the focus of this study. Other configurations (i.e., controlled entry/exit points) and toll parameters for weekends and holidays are not addressed in this study. For the toll model runs, minimum and maximum toll values were defined. A minimum toll of \$0.05 per mile and a maximum toll of \$5.00 per mile were assumed (year 2000 dollars)



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Corridor Segment Locations

- I-5
- SR-51/SR-99
- I-80
- US-50

- X-0 (XX X) Corridor Segment ID
- County Line

Screenlines

- ① I-80 at Yolo Causeway
- ② I-80 at Sacramento River
- ③ US 50 at Sacramento River



Figure 2
Managed Lanes Segments - 2029 Conditions



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Corridor Segment Locations

- I-5
- I-80
- SR-51/SR-99
- US-50

- X-0 (XX X) Corridor Segment ID
- County Line

Screenlines

- ① I-80 at Yolo Causeway
- ② I-80 at Sacramento River
- ③ US 50 at Sacramento River



Figure 3
Managed Lanes Segments - 2049 Conditions

4. Travel Forecasting Methodology

The traffic and revenue forecasts were developed using a modified version of the SACSIM19 activity-based travel demand model. SACOG developed the SACSIM19 model for the *2020 Metropolitan Transportation Plan, Sustainable Communities Strategy (MTP/SCS)*. The model covers the six-county SACOG region, which includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties. As a regional forecasting model, modifications to SACSIM19 were necessary to refine the model for local corridor application. Initial modifications were made as part of the Caltrans District 3 I-5 Managed Lanes Project and are documented in the following reports.

- *I-5 Focus Area Travel Demand Model Calibration & Validation Memo* (May 17, 2020)
- *I-5 Managed Lanes Forecast Methodology Memo* (September 25, 2020)

The changes to the model made for the I-5 Managed Lanes Project were incorporated into the version applied for the I-80/US 50 Managed Lanes Project. To inform the modifications necessary for the I-80/US 50 Managed Lanes Project, the model was tested to verify its sensitivity and ability to replicate observed conditions under base year (2016) conditions within the study area. This testing is referred to as validation. Based on the validation findings, calibration was used to refine the model to improve its performance and sensitivity in the study area. Additional details about the base year model validation are provided in *I-80/US 50 Managed Lanes – Base Year Model Validation and Calibration Memorandum* (August 12, 2020).

One enhancement made for the I-5 Managed Lanes Project that is important to note for traffic and revenue study purposes was the modification of the congestion delay equations. As described in the I-5 Traffic and Revenue Report:

Additionally, corridor travel time calibration was performed to assure that the model reasonably represented the existing traffic delays along the corridor. To evaluate the managed-lane alternatives using the SACSIM toll module, the model needs to reasonably represent the existing delay along the corridor. For toll facilities, this is particularly important because congestion impacts a user's willingness to pay a toll. To reflect the observed congestion more accurately, the model's congestion delay equations were modified to be more sensitive (i.e., increase vehicular delays) when flow rates reached saturation (i.e., when the link volume-to-capacity (v/c) ratios exceed 1.0). Specifically, the added delay increment was applied as a link travel time multiplier in addition to the model's current multiplicative function.

While this modification improved the model's sensitivity to travel time delays, the model still has a limitation from its use of static traffic assignment instead of dynamic traffic assignment (DTA). For example, the model completes all origin-destination (OD) trips during peak hours even if the congested travel time would require longer than one hour to complete the trip (see Appendix A). This is not realistic and would not occur with a DTA. Instead, trips would only travel as far as congested speeds would allow within one hour. This type of limitation may overestimate peak hour demand.

4.1 SACSIM19 Toll Module Application

SACSIM19 introduced new capabilities to evaluate facility-based pricing (e.g., tolling individual lanes) and pay-as-you-go (PAYGO) pricing, which includes mileage-based user fees. For this study, the facility-based pricing was applied to forecast travel demand for each of the tolled alternatives under 2029 and 2049 conditions. Specific details about the development of the SACSIM19 pricing capabilities are available as part of the model documentation available at:

https://www.sacog.org/sites/main/files/file-attachments/000_all_test_draft_sacsim19_model_documentation_full.pdf?1601588553

The facility-based pricing module includes an optimization feature that operates iteratively. The goal of a priced facility is to save travel time. To achieve this goal, the price of the facility must dynamically fluctuate based on demand to maintain uncongested travel speeds. The iterative process is summarized below.

- Assign SOV, HOV2, HOV3+, and two-axle commercial vehicle trips to the network using the initial tolls for each segment.
- Calculate the time savings of using the managed lane compared to the adjacent GP lanes for each segment.
- Calculate the value of time (VOT) toll for each segment: the managed lanes time savings multiplied by the average VOT of \$17.80 per hour (year 2000 dollars).
- Compute the interim next iteration toll for each segment for SOV:
 - If the v/c ratio in any link of the toll segment is greater than 0.825, and the previous toll is greater than the VOT toll, multiply the segment's current toll by 2. If the interim next iteration toll is greater than the segment toll maximum, use the segment toll maximum.
 - If the v/c ratio is less than 0.825, or the segment's previous toll is less than the VOT toll, adjust the segment's toll down to the VOT toll. If the interim next iteration toll is less than the segment toll minimum, use the segment toll minimum.
- Calculate the actual next iteration toll for each segment for SOV: the weighted average of the previous toll and the interim next iteration toll, using a weight that dampens change more strongly with each toll loop. This successive weighted averaging allows for the segment toll to converge to a more finite point, reducing the amount of toll oscillation as the model progresses through each toll loop.
 - Next iteration toll weight = $1/(\text{toll loop number} + 1)$
 - Previous toll weight = $1 - \text{next iteration toll weight}$
- Calculate the actual next iteration toll for HOV2, HOV3+, and two-axle commercial vehicles based on the toll price settings relative to SOV, as previously identified in Table 1.
- Allocate the tolls to each link in the segment proportionally based on length.

- If the maximum change in segment tolls from the previous step is less than \$0.05 (year 2000 dollars), stop the optimization; otherwise, repeat up to five times.

Figures 2 and 3 show how the tolled facilities have been divided into analysis segments. The segments were initially developed by SACOG for the 2020 MTP/SCS. Segments were previously modified in the I-5 corridor as part of the I-5 Managed Lanes Project. Segments in this study area were not modified; however, the segment of I-80 between SR 113 and the Solano/Yolo County line was excluded given the project description for the I-80/US 50 Managed Lanes Project.

Since drivers will vary in how much they value their trip/time, their willingness to pay must also be considered. SACSIM19 includes a distributed VOT for all persons in the model with higher VOT more likely for members of higher income households. The distributed nature of the VOT means that some low-income households will have high VOT for select trips and likewise, high income households will have some trips with low VOT. What the model does not include is recognition that some drivers may choose to not use a tolled or priced lane regardless of the travel time savings.

In a presentation at the 2018 TRB Annual Meeting (Unrevealed Preferences: Unexpected Traveler Response to Pricing on Managed Lanes), Mark W. Burris and John F. Brady highlighted a unique limitation of travel demand model representations of driver choices when it comes to priced lanes. They found that demand for priced lanes is modeled assuming that all travelers choose between GP and priced lanes based on the cost and time savings of the priced lanes. Their data from Texas showed that many travelers were, in fact, not making a choice. “Most travelers on those freeways were not choosing—they always used the same lane regardless of travel time and toll. Travelers that used both sets of lanes often made choices that appeared counter intuitive based on travel time savings and toll rate.” The analysis revealed that, even among regular commuters, 28.3 to 33.3 percent of drivers choose to never use the priced lanes in one study corridor. These percentages increased to 51.9 to 55.8 percent for the second study corridor.

Combined with the use of static assignment, the traffic and revenue forecasts generated by the SACSIM19 model may overestimate demand levels for tolled lanes. This caution should be noted by reviewers of this report when making subsequent decisions about the design and operation of the tolled alternatives.

4.2 Future Year Model Development

The development of the SACSIM19 model to represent 2029 and 2049 conditions is documented in the *I-80/US 50 Managed Lanes – Forecasts Methodology Memorandum* (November 23, 2020) and the *I-80/US 50 Managed Lanes – Travel Demand Modeling Report* (September 2021). Reviewers should note that the model inputs for land use growth have the largest effect on future travel demand. Land use inputs were not developed for each individual alternative. Instead, the SACOG 2020 MTP/SCS land use forecasts associated with specific model years 2016, 2027, and 2040 were used without modification. Then the resulting vehicle trip tables from the SACSIM19 model were factored to produce 2029 and 2049 vehicle trip tables that were used in the final assignment. This approach limits the sensitivity of the traffic and revenue forecasts to any unique land use effects associated with each alternative.

5. Toll Strategies

The three tolled alternatives included in this study represent increasing levels of pricing influence on travel demand and specific modes. As shown in **Table 1**, SOVs are allowed to access the HOT lanes under Alternatives 3 and 4 by paying a toll if sufficient capacity exists to avoid causing congestion in the lane. Under Alternative 4, the HOV occupancy requirement of the lane increases from 2+ to 3+, which increases the capacity for tolled vehicles (SOV and HOV2). All passenger and commercial vehicle modes are tolled in Alternative 5 except for public transit vehicles. **Table 2** explains the toll treatment for each vehicle type by time of day using the SACSIM19 model. The actual policy for tolling will be developed at a later time once a toll operator is selected and could vary from the model parameters below. For example, existing HOV lanes in District 3 operate from 6 to 10 AM and 3 to 7 PM. If actual tolling periods differ from the SACSIM parameters below, the revenue forecasts would change.

Table 2: Toll Strategy by Mode and Time of Day

| Alternative | Daytime (7 AM to 8 PM) | | | | Nighttime (8 PM to 7 AM) |
|---------------------------|------------------------|-----------|-----------|---------|--------------------------|
| | Double Toll | Full Toll | Half Toll | Free | Free |
| Alternative 3 (Add HOT2+) | Truck ¹ | SOV | -- | HOV2+ | All |
| Alternative 4 (Add HOT3+) | Truck | SOV | HOV2 | HOV3+ | All |
| Alternative 5 (Add Toll) | Truck | SOV, HOV | -- | Transit | All |

Note: 1. Truck is limited to two-axle commercial vehicles.
Source: Fehr & Peers (2021)

In the SACSIM19 model, persons are assigned a VOT. If the VOT is high enough, a driver's vehicle trip may be assigned to a managed lane depending on the toll and congestion in the GP lanes. Commercial vehicles (i.e., two-axle trucks) can access the tolled lane, but their toll is twice the toll for passenger vehicles. For Alternative 4, HOVs with two occupants pay half the toll as SOVs. In Alternative 5, all passenger vehicles (SOVs and HOVs) pay the same toll.

5.1 Pricing Objectives

The optimum rate for tolled lanes depends on the specific objectives associated with the use of pricing to influence travel demand. Three common objectives are listed below.

- Maximize toll revenue potential
- Maximize demand in the managed lanes
- Optimize the distribution of traffic between the non-tolled GP lanes and the tolled managed lanes

Other potential objectives could include minimizing vehicle miles of travel (VMT) increases from population and employment growth and improving travel time reliability among others. For purposes of this study, traffic and revenue estimates have been based on weekday toll rates which meet the second objective in the bullet list above, which is, maximizing demand in the managed lane while maintaining the operating speed of 45 mph in the managed lane.

5.2 Toll Operations

The travel forecasting analysis includes the following model input parameters regarding toll operations:

- The tolled lanes would operate during an extended daytime period (from 7 AM to 8 PM) on weekdays only.
- The minimum toll is \$0.05 per mile while the maximum toll is \$5.00 per mile.
- No discounts for clean air vehicles are allowed.
- Tolls will be varied dynamically – as the usage of the managed lanes increases, toll rates will be increased to restrict SOV access to the managed lane to maintain average travel speeds of 45 mph or higher.
- The tolled lanes will provide continuous or near-continuous access for the length of the corridors, consistent with existing HOV lane operation in the Sacramento region. Access to the lanes will be restricted using striping only for segments that experience significant operational issues, such as system interchanges.
- Before entering the tolled lanes, a driver would be informed of the toll through electronic signage consistent with MUTCD and Caltrans standards. The toll at the time of entry to the system would remain constant for the user regardless of toll changes that may occur while the driver is in the system.
- All tolls would be collected electronically without 'toll booths' like the existing FasTrak system.
- HOV users of the HOT lanes would rely on a switchable toll transponder like FasTrak Flex allowing the user to indicate the number of occupants in the vehicle to be eligible for free access or a discounted toll.
- Enforcement areas would be provided along the HOT lanes, where possible.
- Two-axle commercial vehicles may use the managed lanes at double the SOV tolls.
- Medium and heavy trucks are prohibited from using the tolled lanes.
- For planning purposes, toll leakage (uncollected tolls) has been estimated at 10 percent in this analysis, as discussed in Section 6.3.4. To the extent that toll violators contribute to leakage, operational issues may also occur in the tolled lane. For example, a Caltrans research investigation of HOT lanes on I-10 in Los Angeles revealed HOV3+ volumes of over 1,400 in the HOT lane based on FasTrak transponder estimates compared to manual counts revealing less than 400 of these vehicles (Kurzanskiy, 2019). The same study identified that 84 percent of HOT lane users



should be paying compared to only 50 percent that do. This ratio of 84 to 50 indicates the toll leakage may exceed 10 percent. This type of violation can lead to substantial degradation of the tolled lane performance and affect expected revenue.

6. Traffic and Revenue Forecasts

The traffic and revenue forecasts were developed for 2029 and 2049 conditions for each tolled alternative. For the purposes of this study, the specific traffic output metrics include vehicle and person trips by mode (SOV, HOV2, HOV3+, two-axle truck) and lane type (GP, HOT2+, HOT3+, Toll). Other metrics such as transit ridership is not included but is available in the *I-80/US 50 Managed Lanes – Travel Demand Modeling Report* (September 2021).

These metrics are reported below for the Yolo Causeway screenline in the middle of the I-80/US 50 Managed Lanes Project corridor. The final revenue forecasts are based on more detailed traffic volume forecasts recorded for toll segments I-80 Yolo A, I-80 Yolo B, and US 50 Yolo A shown in **Figures 2** and **3**. The screenline location is also shown on the graphics.

6.1 Vehicle Trips

Vehicle trip forecasts are summarized below for I-80 at the Yolo Causeway screenline under 2029 and 2049 conditions, respectively. Directional vehicle trips on I-80 at the Yolo Causeway, and vehicle trips on I-80 at the Sacramento River and US 50 at the Sacramento River, are provided in **Appendix C**.

Table 3 shows that the 2029 two-way total managed lane volume for Alternatives 3 through 5 ranges between 2,939 and 3,176 vehicle trips in the AM peak hour, 3,139 and 3,444 vehicle trips in the PM peak hour, and 41,263 and 50,895 daily on I-80 at the Yolo Causeway.

Table 4 reflects similar results in 2049 with the managed lane vehicle trips ranging from 3,104 and 3,329 during the AM peak hour, 3,046 and 4,086 during the PM peak hour, and 46,930 and 55,075 daily.

Key observations about these volumes are listed below.

- AM and PM peak hour volumes (2029 and 2049) show no HOVs using the GP lanes in alternatives where HOVs using the managed lanes are not tolled. In general, some HOVs will remain in the GP lanes as evidenced by the research noted above and general observation of other freeway corridors in California.
- PM peak hour volumes (2029 and 2049) are high enough in the managed lanes to exceed the flow levels necessary to maintain desired speeds. The use of static assignment and maximum tolls may contribute to this outcome.
- As tolling levels increase from Alternative 3 (Add HOT2+) to Alternative 5 (Add Toll), HOV demand decreases under 2029 and 2049 conditions. Basically, the ability of SOVs to pay for faster travel times diminishes the value of forming carpools. In addition, the overall volume and VMT along the corridor slightly decreases from Alternative 3 (Add HOT2+) to Alternative 5 (Add Toll).

Table 3: 2029 Two-Way Total Vehicle Trips on I-80 at the Yolo Causeway

| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|-----------------------|-----------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|
| | | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll |
| General Purpose Lanes | SOV | 8,043 | 7,511 | 7,226 | 9,933 | 8,934 | 8,335 | 105,816 | 99,274 | 95,308 |
| | HOV2 | 0 | 719 | 696 | 0 | 1,088 | 1,097 | 2,628 | 15,965 | 15,354 |
| | HOV3+ | 0 | 0 | 424 | 0 | 0 | 551 | 1,539 | 1,781 | 8,456 |
| | CV ¹ | 2,124 | 1,958 | 1,864 | 2,094 | 1,888 | 1,758 | 33,838 | 32,135 | 30,517 |
| | Total | 10,166 | 10,187 | 10,209 | 12,026 | 11,908 | 11,740 | 143,822 | 149,153 | 149,633 |
| Managed Lanes | SOV | 789 | 1,237 | 1,540 | 0 | 756 | 1,318 | 7,134 | 12,232 | 16,072 |
| | HOV2 | 1,317 | 531 | 559 | 2,250 | 993 | 996 | 26,026 | 11,648 | 12,323 |
| | HOV3+ | 839 | 880 | 378 | 1,194 | 1,232 | 529 | 14,786 | 14,984 | 7,209 |
| | CV ¹ | 230 | 375 | 462 | 0 | 169 | 295 | 2,949 | 4,138 | 5,660 |
| | Total | 3,176 | 3,024 | 2,939 | 3,444 | 3,149 | 3,139 | 50,895 | 43,001 | 41,263 |
| All Lanes | SOV | 8,831 | 8,748 | 8,767 | 9,933 | 9,688 | 9,653 | 112,950 | 111,506 | 111,380 |
| | HOV2 | 1,317 | 1,250 | 1,254 | 2,250 | 2,080 | 2,093 | 28,654 | 27,613 | 27,676 |
| | HOV3+ | 839 | 880 | 802 | 1,194 | 1,232 | 1,081 | 16,325 | 16,765 | 15,665 |
| | CV ¹ | 2,354 | 2,333 | 2,326 | 2,094 | 2,057 | 2,054 | 36,787 | 36,271 | 36,175 |
| | Total | 13,343 | 13,210 | 13,148 | 15,470 | 15,058 | 14,880 | 194,716 | 192,155 | 190,897 |
| Tolled Vehicles | | 1,019 | 2,143 | 2,939 | 0 | 1,918 | 3,138 | 10,083 | 28,018 | 41,264 |

Notes: Totals may not add up due to rounding.

1. CV – commercial vehicles comprised of two-axle, medium, and heavy trucks.

Source: Fehr & Peers (2021)

Table 4: 2049 I-80 Two-Way Total Vehicle Trips at the Yolo Causeway

| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|-----------------------|-----------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|
| | | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll |
| General Purpose Lanes | SOV | 8,823 | 8,289 | 7,760 | 10,591 | 9,659 | 9,085 | 115,841 | 106,977 | 101,014 |
| | HOV2 | 0 | 739 | 776 | 0 | 1,196 | 1,182 | 3,536 | 19,038 | 17,778 |
| | HOV3+ | 0 | 0 | 514 | 0 | 0 | 635 | 2,168 | 2,866 | 10,305 |
| | CV ¹ | 2,076 | 1,910 | 1,774 | 1,987 | 1,833 | 1,710 | 35,020 | 32,091 | 30,361 |
| | Total | 10,900 | 10,937 | 10,826 | 12,578 | 12,689 | 12,613 | 156,566 | 160,974 | 159,457 |
| Managed Lanes | SOV | 612 | 1,124 | 1,570 | 0 | 505 | 1,062 | 6,525 | 12,872 | 18,840 |
| | HOV2 | 1,502 | 613 | 632 | 2,636 | 1,075 | 1,125 | 28,988 | 11,629 | 13,470 |
| | HOV3+ | 1,042 | 1,109 | 455 | 1,451 | 1,663 | 633 | 17,149 | 17,678 | 8,229 |
| | CV ¹ | 173 | 316 | 448 | 0 | 108 | 226 | 2,412 | 4,800 | 6,391 |
| | Total | 3,329 | 3,162 | 3,104 | 4,086 | 3,352 | 3,046 | 55,075 | 46,979 | 46,930 |
| All Lanes | SOV | 9,435 | 9,413 | 9,330 | 10,591 | 10,164 | 10,148 | 122,366 | 119,849 | 119,854 |
| | HOV2 | 1,502 | 1,352 | 1,409 | 2,636 | 2,271 | 2,307 | 32,523 | 30,667 | 31,248 |
| | HOV3+ | 1,042 | 1,109 | 969 | 1,451 | 1,664 | 1,269 | 19,317 | 20,544 | 18,534 |
| | CV ¹ | 2,249 | 2,226 | 2,222 | 1,987 | 1,941 | 1,936 | 37,433 | 36,891 | 36,752 |
| | Total | 14,229 | 14,100 | 13,930 | 16,664 | 16,040 | 15,659 | 211,641 | 207,953 | 206,387 |
| Tolled Vehicles | | 785 | 2,053 | 3,105 | 0 | 1,688 | 3,046 | 8,937 | 29,301 | 46,930 |

Notes: Totals may not add up due to rounding.

1. CV – commercial vehicles comprised of two-axle, medium, and heavy trucks.

Source: Fehr & Peers (2021)

6.2 Person Trips

Tables 5 and 6 summarize the person trip forecasts on I-80 at the Yolo Causeway screenline under 2029 and 2049 conditions, respectively. Directional person trips on I-80 at the Yolo Causeway, and person trips on the I-80 at Sacramento River and the US 50 at Sacramento River screenlines are provided in **Appendix D**.

Person trips were estimated assuming one person per single occupant vehicle, two persons per HOV2 vehicle, 3.4 persons per HOV3+ vehicle, and one person per commercial vehicle. The persons per vehicle factors, primarily for HOV3+, are consistent with the factors used in the SACSIM19 model. The person

volume comparison between alternatives aligns with the vehicle volume comparison presented in the previous tables.

In addition, average vehicle occupancy in the managed lane decreases between Alternative 3 (Add HOT2+) and Alternative 5 (Add Toll) from 2.05 to 1.50 persons per vehicle in the AM peak hour, from 2.49 to 1.72 in the PM peak hour, and from 2.21 and 1.72 daily under 2029 conditions. The overall average vehicle occupancy for the screenline of I-80 at the Yolo Causeway remains about the same between alternatives, with an average of about 1.35 persons per vehicle daily.

Table 5: 2029 Two-Way Total Person Trips on I-80 at the Yolo Causeway

| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|-----------------------|--------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| | | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll |
| General Purpose Lanes | SOV | 8,043 | 7,511 | 7,226 | 9,933 | 8,934 | 8,335 | 105,816 | 99,274 | 95,308 |
| | HOV2 | 0 | 1,438 | 1,392 | 0 | 2,176 | 2,194 | 5,256 | 31,930 | 30,708 |
| | HOV3+ | 0 | 0 | 1,442 | 0 | 0 | 1,873 | 5,233 | 6,055 | 28,750 |
| | CV ¹ | 2,124 | 1,958 | 1,864 | 2,094 | 1,888 | 1,758 | 33,838 | 32,135 | 30,517 |
| | Total | 10,167 | 10,907 | 11,924 | 12,027 | 12,998 | 14,160 | 150,143 | 169,394 | 185,283 |
| | Average Occupancy | 1.00 | 1.07 | 1.17 | 1.00 | 1.09 | 1.21 | 1.04 | 1.14 | 1.24 |
| Managed Lanes | SOV | 789 | 1,237 | 1,540 | 0 | 756 | 1,318 | 7,134 | 12,232 | 16,072 |
| | HOV2 | 2,634 | 1,062 | 1,118 | 4,500 | 1,986 | 1,992 | 52,052 | 23,296 | 24,646 |
| | HOV3+ | 2,853 | 2,992 | 1,285 | 4,060 | 4,189 | 1,799 | 50,272 | 50,946 | 24,511 |
| | CV ¹ | 230 | 375 | 462 | 0 | 169 | 295 | 2,949 | 4,138 | 5,660 |
| | Total | 6,506 | 5,666 | 4,405 | 8,560 | 7,100 | 5,404 | 112,407 | 90,612 | 70,889 |
| | Average Occupancy | 2.05 | 1.87 | 1.50 | 2.49 | 2.25 | 1.72 | 2.21 | 2.11 | 1.72 |
| All Lanes | SOV | 8,831 | 8,748 | 8,767 | 9,933 | 9,688 | 9,653 | 112,950 | 111,506 | 111,380 |
| | HOV2 | 2,634 | 2,500 | 2,508 | 4,500 | 4,160 | 4,186 | 57,308 | 55,226 | 55,352 |
| | HOV3+ | 2,853 | 2,992 | 2,727 | 4,060 | 4,189 | 3,675 | 55,505 | 57,001 | 53,261 |
| | CV ¹ | 2,354 | 2,333 | 2,326 | 2,094 | 2,057 | 2,054 | 36,787 | 36,271 | 36,175 |
| | Total | 16,672 | 16,573 | 16,328 | 20,587 | 20,094 | 19,568 | 262,550 | 260,004 | 256,168 |
| | Average Occupancy | 1.25 | 1.25 | 1.24 | 1.33 | 1.33 | 1.32 | 1.35 | 1.35 | 1.34 |

Notes: Totals may not add up due to rounding.

1. CV – commercial vehicles comprised of two-axle, medium, and heavy trucks.

Source: Fehr & Peers (2021)

Table 6: 2049 I-80 Two-Way Total Person Trips at the Yolo Causeway

| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
|-----------------------|--------------------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|
| | | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll | Alt 3 HOT2+ | Alt 4 HOT3+ | Alt 5 Toll |
| General Purpose Lanes | SOV | 8,823 | 8,289 | 7,760 | 10,591 | 9,659 | 9,085 | 115,841 | 106,977 | 101,014 |
| | HOV2 | 0 | 1,478 | 1,552 | 0 | 2,392 | 2,364 | 7,072 | 38,076 | 35,556 |
| | HOV3+ | 0 | 0 | 1,748 | 0 | 0 | 2,159 | 7,371 | 9,744 | 35,037 |
| | CV ¹ | 2,076 | 1,910 | 1,774 | 1,987 | 1,833 | 1,710 | 35,020 | 32,091 | 30,361 |
| | Total | 10,899 | 11,677 | 12,834 | 12,578 | 13,884 | 15,318 | 165,304 | 186,888 | 201,968 |
| | Average Occupancy | 1.00 | 1.07 | 1.19 | 1.00 | 1.09 | 1.21 | 1.06 | 1.16 | 1.27 |
| Managed Lanes | SOV | 612 | 1,124 | 1,570 | 0 | 505 | 1,062 | 6,525 | 12,872 | 18,840 |
| | HOV2 | 3,004 | 1,226 | 1,264 | 5,272 | 2,150 | 2,250 | 57,976 | 23,258 | 26,940 |
| | HOV3+ | 3,543 | 3,771 | 1,547 | 4,933 | 5,654 | 2,152 | 58,307 | 60,105 | 27,979 |
| | CV ¹ | 173 | 316 | 448 | 0 | 108 | 226 | 2,412 | 4,800 | 6,391 |
| | Total | 7,332 | 6,437 | 4,829 | 10,205 | 8,417 | 5,690 | 125,220 | 101,035 | 80,150 |
| | Average Occupancy | 2.20 | 2.04 | 1.56 | 2.50 | 2.51 | 1.87 | 2.27 | 2.15 | 1.71 |
| All Lanes | SOV | 9,435 | 9,413 | 9,330 | 10,591 | 10,164 | 10,148 | 122,366 | 119,849 | 119,854 |
| | HOV2 | 3,004 | 2,704 | 2,818 | 5,272 | 4,542 | 4,614 | 65,046 | 61,334 | 62,496 |
| | HOV3+ | 3,543 | 3,771 | 3,295 | 4,933 | 5,658 | 4,315 | 65,678 | 69,850 | 63,016 |
| | CV ¹ | 2,249 | 2,226 | 2,222 | 1,987 | 1,941 | 1,936 | 37,433 | 36,891 | 36,752 |
| | Total | 18,231 | 18,114 | 17,665 | 22,783 | 22,305 | 21,013 | 290,523 | 287,924 | 282,118 |
| | Average Occupancy | 1.28 | 1.28 | 1.27 | 1.37 | 1.39 | 1.34 | 1.37 | 1.38 | 1.37 |

Notes: Totals may not add up due to rounding.
 1. CV – commercial vehicles comprised of two-axle, medium, and heavy trucks.
 Source: Fehr & Peers (2021)

In 2049, average vehicle occupancy in the managed lane decreases between Alternative 3 (Add HOT2+) and Alternative 5 (Add Toll) from 2.20 to 1.56 persons per vehicle in the AM peak hour, from 2.50 to 1.87 in the peak hour, and from 2.27 to 1.71 daily. Similarly, the overall average vehicle occupancy for I-80 at the Yolo Causeway remains about the same between alternatives, with an average of 1.37 persons per vehicle daily.

6.3 Revenue Forecasts

6.3.1 Toll Revenue Forecasting Methodology

The gross toll revenue forecasted in this study is derived from the SACSIM19 link-based vehicle trips by mode and lane type presented above. The model accounts for toll-qualifying trips in each toll segment and their length. These values are multiplied by the corresponding toll prices per mile to produce forecasts for each toll segment that are then aggregated to full corridor length. The model does not restrict any portion of the driver population from using the tolled lanes. This may lead to an overestimate of demand since some drivers may never use the toll lane as reported in the Burris and Brady research study. The revenue methodology also does not account for potential revenue from toll lane violations. According to the I-10 research study cited above, 20 to 40 percent of HOT lane revenue for I-10 was from violation fines.

6.3.2 Gross Toll Revenue

Tables 7 and **8** summarize gross toll revenue results for each tolled alternative under 2029 and 2049 conditions, respectively. Results are presented for each direction on the I-80 segment between the Solano/Yolo County line and US 50 (I-80 Yolo A), the I-80 segment between US 50 and West El Camino Avenue (I-80 Yolo B), and the US 50 segment between I-80 and I-5 (US 50 Yolo A). All dollar values are reported in 2021 dollars.

The SACSIM model assesses costs and VOT in year 2000 dollars. All tolls and revenues in this section have been updated to 2021 dollars (an increase of 61 percent over 2000 dollars) using the Consumer Price Index (CPI). Annual revenue assumes 250 tolled weekdays per year. Net revenue is presented in Section 6.3.5.

The highest optimized toll occurs during the PM peak hour for I-80 Yolo A under Alternative 3. For that scenario, the maximum toll of \$5.00 per mile (or \$8.05 per mile in 2021 dollars) is reached given the high demand volume. Alternatives 4 and 5 for this segment also have the highest toll although the value is less than the maximum.

Under 2029 conditions, Alternative 4 (Add HOT3+) would generate almost 12 times the revenue of Alternative 3 (Add HOT2+), while Alternative 5 (Add Toll) would generate about 1.7 times that of Alternative 4.

In 2049, Alternative 4 would generate almost 15 times the revenue of Alternative 3, and Alternative 5 would generate about 1.7 times that of Alternative 4. These outcomes would depend on whether the demand volumes are fully realized, which is unlikely for the reasons presented above.

Table 7: 2029 Toll Cost and Gross Revenue (Year 2021 Dollars)

| Summary | Direction | Alt 3 (Add HOT2+) | | | Alt 4 (Add HOT3+) | | | Alt 5 (Add Toll) | | |
|----------------------------|-----------|-------------------|-------------|--------------|-------------------|-------------|--------------|------------------|-------------|--------------|
| | | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A |
| Minimum Toll (Off-Peak) | EB | \$0.82 | \$0.35 | \$0.29 | \$0.82 | \$0.39 | \$0.29 | \$0.82 | \$0.40 | \$0.29 |
| | WB | \$0.85 | \$0.27 | \$0.31 | \$0.85 | \$0.27 | \$0.31 | \$0.85 | \$0.27 | \$0.31 |
| AM Peak Hour Toll | EB | \$0.85 | \$0.39 | \$0.37 | \$0.85 | \$0.42 | \$0.35 | \$0.82 | \$0.42 | \$0.29 |
| | WB | \$4.13 | \$0.48 | \$0.40 | \$2.84 | \$0.53 | \$0.40 | \$2.22 | \$0.55 | \$0.37 |
| PM Peak Hour Toll | EB | \$80.30 | \$0.53 | \$26.48 | \$14.34 | \$0.61 | \$1.59 | \$16.59 | \$0.63 | \$1.09 |
| | WB | \$83.83 | \$0.27 | \$1.35 | \$12.08 | \$0.29 | \$1.27 | \$9.33 | \$0.31 | \$0.77 |
| Daily Gross Revenue | EB | \$840 | \$0 | \$281 | \$17,170 | \$208 | \$3,182 | \$33,961 | \$408 | \$4,568 |
| | WB | \$1,469 | \$0 | \$721 | \$15,451 | \$353 | \$3,070 | \$23,956 | \$678 | \$4,250 |
| Total Daily Gross Revenue | | \$3,310 | | | \$39,435 | | | \$67,821 | | |
| Total Annual Gross Revenue | | \$827,600 | | | \$9,858,600 | | | \$16,955,200 | | |

Note: Bold values denote that segment reached the maximum per mile toll.

Source: Fehr & Peers (2021)

Table 8: 2049 Toll Cost and Gross Revenue (Year 2021 Dollars)

| Summary | Direction | Alt 3 (Add HOT2+) | | | Alt 4 (Add HOT3+) | | | Alt 5 (Add Toll) | | |
|----------------------------|-----------|-------------------|-------------|--------------|-------------------|-------------|--------------|------------------|-------------|--------------|
| | | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A | I-80 Yolo A | I-80 Yolo B | US 50 Yolo A |
| Minimum Toll (Off-Peak) | EB | \$0.82 | \$0.27 | \$0.29 | \$0.82 | \$0.27 | \$0.29 | \$0.84 | \$0.27 | \$0.29 |
| | WB | \$0.85 | \$0.31 | \$0.32 | \$0.85 | \$0.31 | \$0.31 | \$0.87 | \$0.31 | \$0.31 |
| AM Peak Hour Toll | EB | \$1.83 | \$0.27 | \$26.48 | \$1.59 | \$0.27 | \$3.50 | \$1.16 | \$0.27 | \$3.23 |
| | WB | \$11.48 | \$0.92 | \$1.88 | \$9.54 | \$0.64 | \$1.69 | \$7.97 | \$0.63 | \$1.08 |
| PM Peak Hour Toll | EB | \$80.30 | \$0.79 | \$26.48 | \$28.91 | \$0.50 | \$14.29 | \$22.50 | \$0.34 | \$7.51 |
| | WB | \$83.83 | \$0.31 | \$28.55 | \$23.62 | \$0.31 | \$3.39 | \$16.69 | \$0.31 | \$2.52 |
| Daily Gross Revenue | EB | \$952 | \$105 | \$94 | \$23,879 | \$1,174 | \$3,789 | \$44,183 | \$1,628 | \$8,914 |
| | WB | \$1,260 | \$408 | \$1,197 | \$24,804 | \$1,227 | \$5,277 | \$39,903 | \$2,011 | \$7,669 |
| Total Daily Gross Revenue | | \$4,016 | | | \$60,151 | | | \$104,307 | | |
| Total Annual Gross Revenue | | \$1,003,900 | | | \$15,037,500 | | | \$26,076,800 | | |

Notes: Bold values denote that segment reached the maximum per mile toll.

Source: Fehr & Peers (2021)

Under 2029 and 2049 conditions, there would be limited capacity to sell to toll-paying vehicles (SOVs) under Alternative 3 (Add HOT2+). The high level of HOVs in the corridor and the model's forecast that almost all of them would use the managed lane contribute to this outcome, which is unlikely as presented above. The US 50 Yolo A and I-80 Yolo B segments do not have as much congestion during the peak hours; therefore, travel times in the GP and managed lanes are similar and reduce the benefit of paying to use the managed lane. The I-80 Yolo B segment in particular lacks sufficient congestion to generate any toll revenue under 2029 conditions.

The revenue results presented are only for the I-80/US 50 Managed Lanes portion of the larger regional managed lane network as previously identified in **Figure 2** for 2029 conditions and **Figure 3** for 2049 conditions.

6.3.3 Toll Operating and Maintenance Costs

Caltrans District 3 provided information on toll operating and maintenance (O&M) costs collected by DKS from corridors in District 4 as summarized in **Table 9**.

Table 9: Toll Lane O&M Cost Data and Estimates

| Agency/Toll Lane Facility | Length (lane - miles) | Operating Expense | Operating Expense per lane-mile | Source | Dollar Year |
|---|-----------------------|-------------------|---------------------------------|--|-------------|
| Sunol Smart Carpool Lane Joint Powers Authority - I-680 Southbound | 13.3 | \$1,880,000 | \$141,350 | Financial Report – Fiscal Year (FY) 2019-20 | 2020 |
| Bay Area Infrastructure Financing Authority - I-680 (Contra Costa County) | 23.0 | \$7,341,837 | \$319,210 | Financial Report – 2019 | 2020 |
| Alameda County Transportation Commission - I-580 | 30.0 | \$5,912,000 | \$197,070 | Managed Lane 20 Year Plan Projected FY 2019-20 | 2020 |

Source: Caltrans District 3 (2021)

The average operating expense per lane-mile for the three facilities is \$219,210, which was rounded to \$220,000 per lane-mile for the I-5 Managed Lanes Project (in 2020 dollars). For this study, the O&M lane-mile cost was inflated to \$231,000 for 2021 dollars. The total I-80/US 50 Managed Lanes corridor length subject to tolling is 34.5 lane-miles.¹ Based on the average per lane-mile O&M cost, the total annual O&M cost is estimated to be \$7,969,500. Note that the range of per lane-mile O&M costs included a high-end estimate of \$335,171 (in 2021 dollars) that would increase the annual O&M cost to \$11,563,400. Both the average and the high-end estimate will be used when discounting the gross revenue forecasts. The rationale

¹ The total managed lanes coded in the SACSIM19 model for the I-80/US 50 Managed Lanes corridor consist of 20.5 lane-miles on I-80 between the Solano County line and US 50, 6.9 lane-miles on US 50 between I-80 and I-5, and 7.1 lane-miles on I-80 between US 50 and west of West El Camino Avenue.

for this approach is that District 3 does not have existing tolled facilities and any new facility may experience higher costs initially until the system matures.

6.3.4 Revenue Leakage

Revenue leakage refers to a reduction in toll revenue due to transactions where no revenue is collected, or revenue is not fully collected. With electronic tolling systems where drivers are charged a toll without having to stop or slow down, revenue leakage is caused by the system or users. System failures typically relate to the inability to complete the toll transaction usually due to incomplete data about the vehicle or its license. Users cause leakage primarily when they avoid toll payment, which is common in some HOT lane corridors. A detailed list of revenue leakage sources identified in the *I-5 Traffic and Revenue Report* (August 2021) is provided below.

System Causes

- Collection system failures (system down, camera failure, etc.)
- Damaged/obstructed plate images
- Transponder failures
- License plate database issues (no record, bad addresses, etc.)
- Foreign plates

User Causes

- Nonpayment of invoices
- Intentional obstruction of license plates/no plate
- Unregistered vehicles
- Incorrect setting on flex transponders including violations related to misrepresenting vehicle occupancy levels

The actual percentage of gross revenue lost to leakage tends to decline over time as users become more familiar with tolled operations. Caltrans has agreed to use a 10 percent revenue leakage for this project. However, high rates of violators may contribute to greater losses, which could compound financial performance issues if violators also cause the managed lanes to become congested, thereby reducing their use.

6.3.5 Forecasted Annual Net Operating Toll Revenue

Tables 10 and **11** present the forecasted annual net operating toll revenue for each alternative under 2029 and 2049 conditions, respectively. It should be noted that these forecasts do not include other major costs, such as the start-up costs of establishing a toll agency or the capital civil construction and toll collection

equipment costs of implementing the priced lanes. Travel demand model limitations also influence the revenue forecasts.

Table 10: Estimated 2029 Annual Net Operating Toll Revenue (Year 2021 Dollars)

| Summary | Alt 3 (Add HOT2+) | Alt 4 (Add HOT3+) | Alt 5 (Add Toll) |
|--|-------------------|-------------------|------------------|
| Daily Gross Revenue | \$3,310 | \$39,435 | \$67,821 |
| Annual Gross Revenue | \$827,500 | \$9,858,700 | \$16,955,200 |
| Estimated Revenue Leakage | \$82,750 | \$985,870 | \$1,695,520 |
| Average Annual O&M Cost | \$7,969,500 | \$7,969,500 | \$7,969,500 |
| High Annual O&M Cost | \$11,563,400 | \$11,563,400 | \$11,563,400 |
| Net Operating Toll Revenue (based on average O&M cost) | -\$7,224,750 | \$903,330 | \$7,290,180 |
| Net Operating Toll Revenue (based on high O&M cost) | -\$10,818,650 | -\$2,690,570 | \$3,696,280 |

Source: Fehr & Peers (2021)

Table 11: Estimated 2049 Annual Net Operating Toll Revenue (Year 2021 Dollars)

| Summary | Alt 3 (Add HOT2+) | Alt 4 (Add HOT3+) | Alt 5 (Add Toll) |
|--|-------------------|-------------------|------------------|
| Daily Gross Revenue | \$4,016 | \$60,151 | \$104,307 |
| Annual Gross Revenue | \$1,004,000 | \$15,037,600 | \$26,076,900 |
| Estimated Revenue Leakage | \$100,400 | \$1,503,760 | \$2,607,690 |
| Average Annual O&M Cost | \$7,969,500 | \$7,969,500 | \$7,969,500 |
| High Annual O&M Cost | \$11,563,400 | \$11,563,400 | \$11,563,400 |
| Net Operating Toll Revenue (based on average O&M cost) | -\$7,065,900 | \$5,564,340 | \$15,499,710 |
| Net Operating Toll Revenue (based on high O&M cost) | -\$10,659,800 | \$1,970,440 | \$11,905,810 |

Source: Fehr & Peers (2021)

In 2029, the I-80/US 50 Managed Lanes would operate at a net loss in Alternative 3 (Add HOT2+) based on the SACSIM19 forecasts. Both Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll) would have a positive net revenue. Under the higher level of potential O&M costs, Alternative 4 would operate at a net loss. Alternative 5 would provide the highest net operating toll revenue of almost \$7.3 million annually in 2029 using average O&M costs and considering that all vehicles would be tolled. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

In 2049, the I-80/US 50 Managed Lanes would continue to operate at a net loss in Alternative 3 (Add HOT2+) and with positive net revenue in Alternative 4 (Add HOT3+) and Alternative 5 (Add Toll) based on the

SACSIM19 forecasts. Alternative 5 would continue provide the highest net operating toll revenue of approximately \$15.5 million annually in 2049 using average O&M costs and considering all vehicles would be tolled. Given the modeling limitations, these revenue forecasts are appropriate for alternative comparison, but the actual values are likely to differ.

7. Summary of Toll Forecasts

This study provides a planning-level forecast of the **weekday demand and revenue** associated for each of the tolled alternatives proposed as part of the I-80/US Managed Lanes Project based on the SACSIM19 travel demand model. More detailed investment-grade revenue studies would be necessary to accurately assess system revenue. The following items summarize key findings associated with the toll forecasts.

- The SACSIM19 model has limitations that affect the travel demand forecasts used in the revenue forecasts. These limitations may contribute to an overestimate of demand but would not alter the comparative differences between alternatives.
- The forecasts can be improved through enhancing the model's sensitivity to travel time, toll lane access points, toll collection schemes, and refining the user preferences for toll lane use. These types of improvements would be particularly important for an investment-grade analysis.
- Given the high demand volumes that occur on weekends and holidays in the corridor, opportunities exist to increase revenue generation by extending the tolling period and operating scheme beyond the weekday daytime hours of 7 AM to 8 PM.
- Alternative 3 (Add HOT2+) results in negative net revenues in 2029 and 2049 due to the high demand by HOVs filling the managed lane and limiting the capacity available for toll paying SOVs.
- Alternative 4 (Add HOT3+) results in negative net revenues in 2029 and positive net revenues in 2049 as more HOVs are tolled.
- Alternative 5 (Add Toll) results in positive net toll revenues in 2029 and 2049. However, as all HOVs are tolled, this alternative reduces HOV demand compared to Alternative 3 and 4. Alternative 5 also reduces total vehicle trips and vehicle miles traveled (VMT), person trips, and vehicle occupancy in the corridor as compared to Alternatives 3 and 4.

8. References

The references cited in this report are listed below.

- *2020 Metropolitan Transportation Plan, Sustainable Communities Strategy (MTP/SCS)*, SACOG, November 18, 2019. <https://www.sacog.org/2020-metropolitan-transportation-plansustainable-communities-strategy-update>
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- Kurzhanskiy, Alex A. Modeling and Control of HOT lane – Phase II – Toolbox development for efficient quantitative assessment of operational scenarios on freeways with managed lanes. UC Berkeley Path Program. Caltrans, June 3, 2019. <https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/final-reports/ca18-3109-finalreport-a11y.pdf>

Appendix

- A. Congested Travel Time Comparisons
- B. Toll Segment IDs from SACSIM19 Model
- C. Detailed Vehicle Volume Tables
- D. Detailed Person Volume Tables

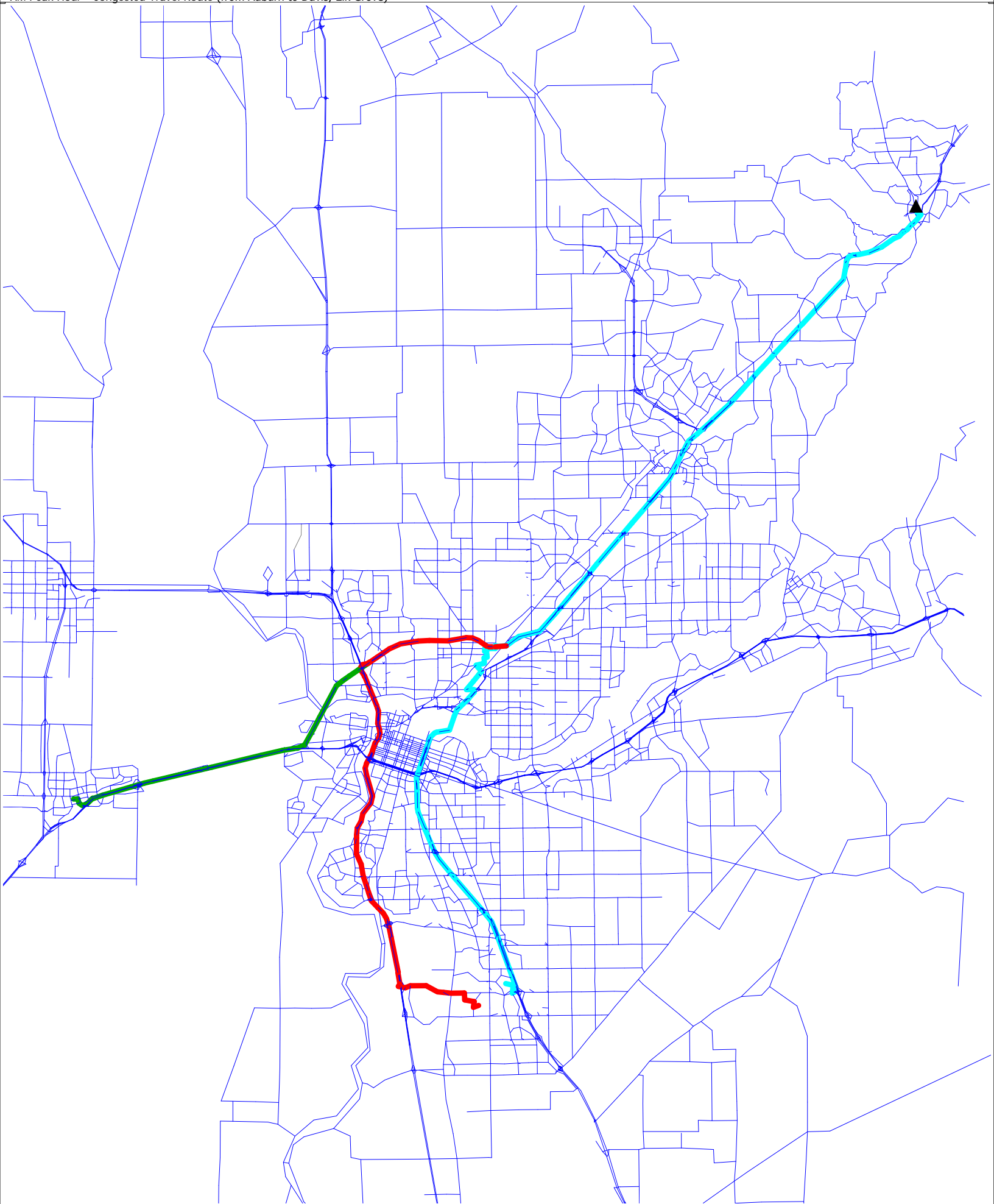
Appendix A:

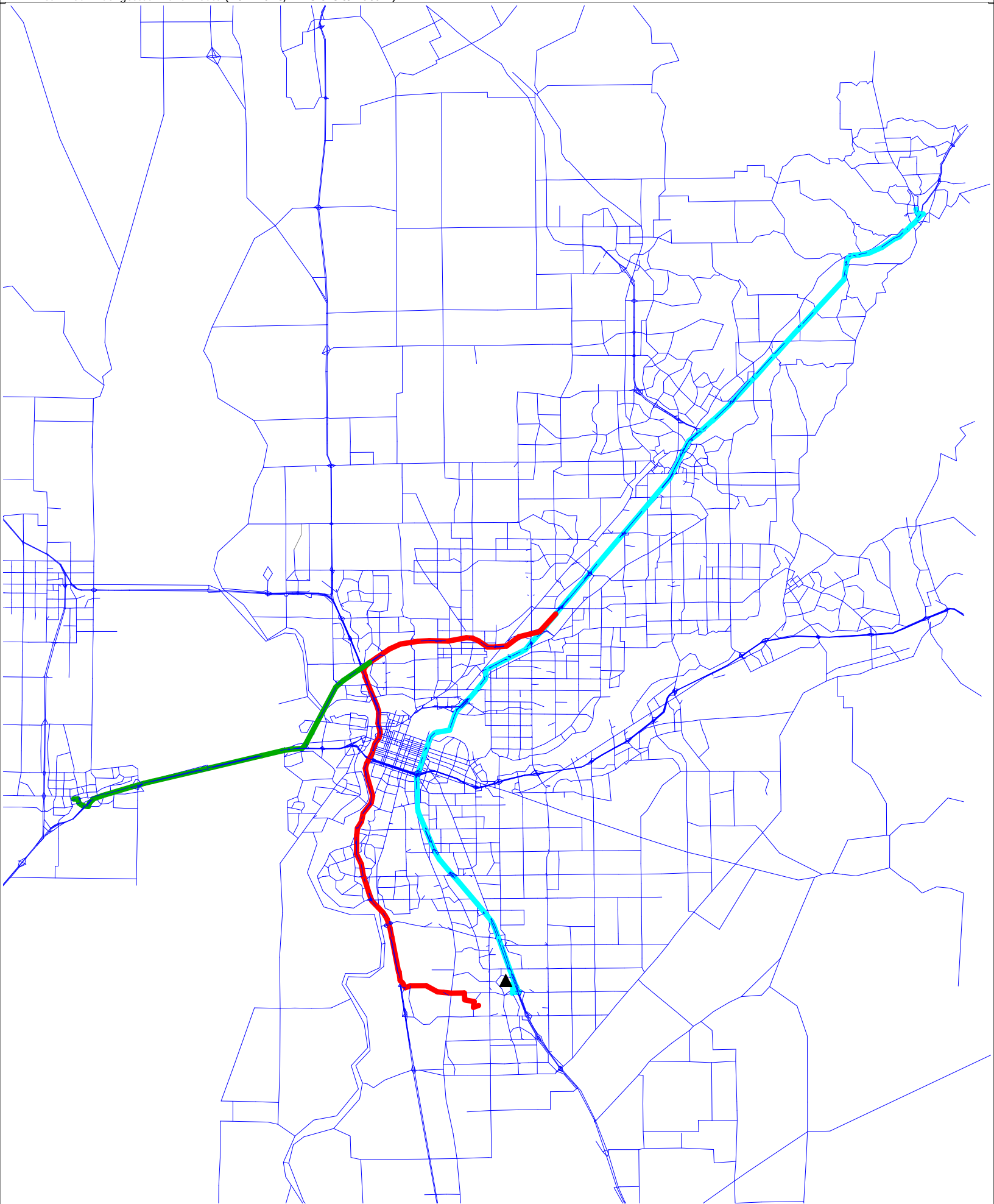
Congested Travel Time Comparisons

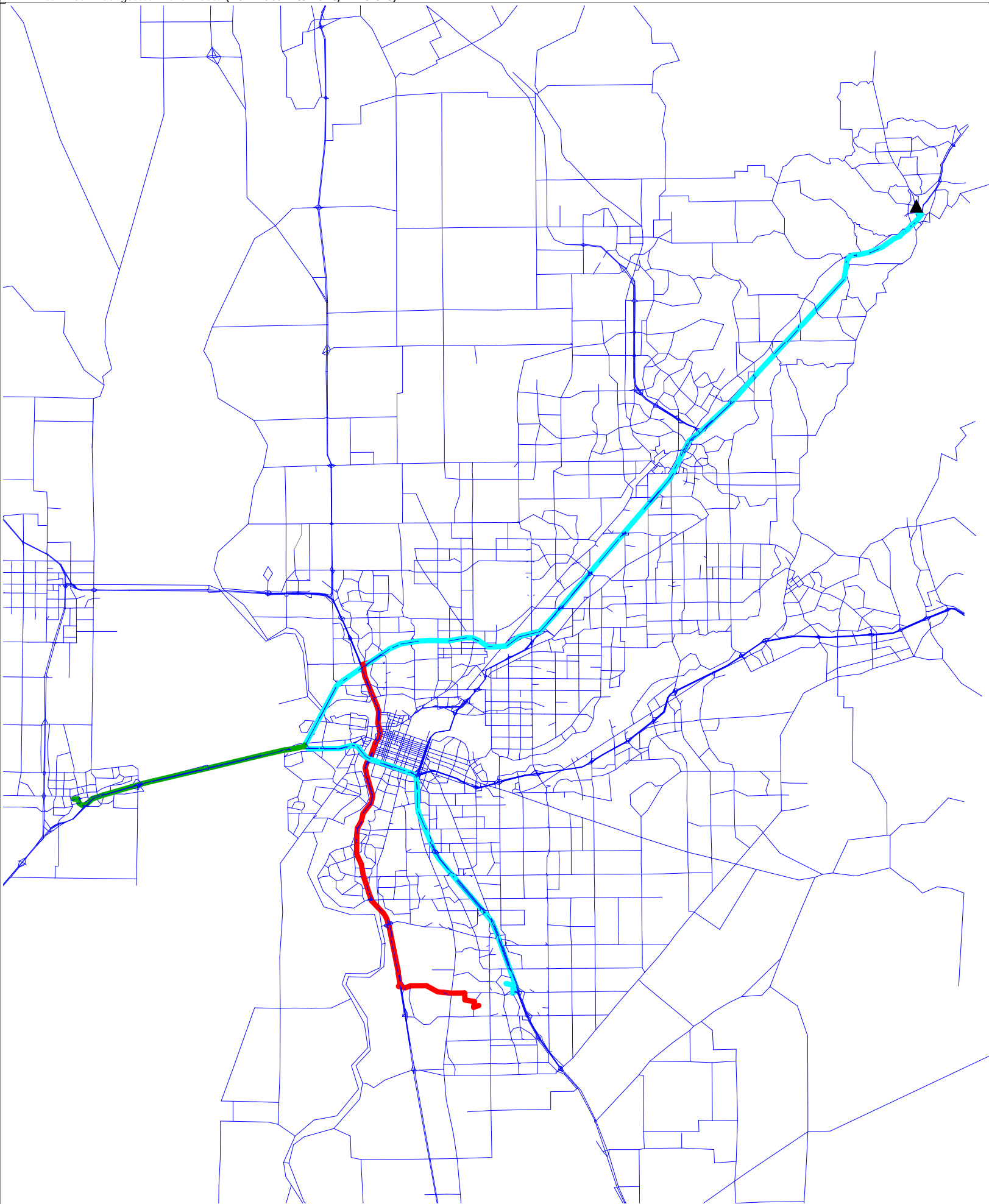
Congested Travel Time (Minutes) from SACSIM19 Model

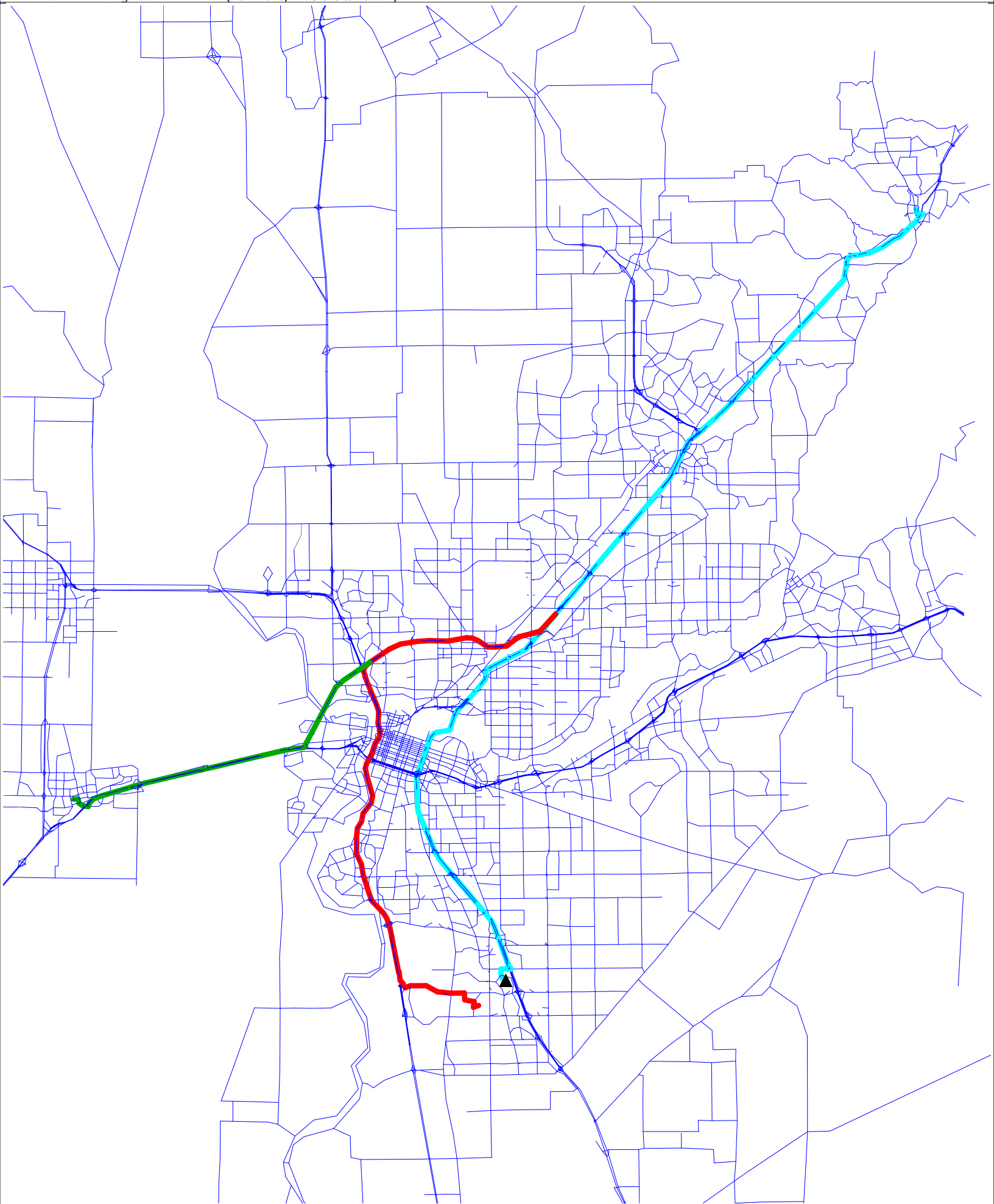
| Origin/Destination | 2029 Add HOT 2 | | | | 2029 Add HOT 3+ | | | | 2029 Add Express Lane | | | |
|--|----------------|---------------------|--------------|---------------------|-----------------|---------------------|--------------|---------------------|-----------------------|---------------------|--------------|---------------------|
| | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | |
| | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes |
| Auburn to Davis | 75 | 60 | 62 | 56 | 74 | 59 | 62 | 55 | 75 | 58 | 62 | 54 |
| Auburn to Elk Grove* (*near Laguna Blvd / Bruceville Rd midway between I-5 & SR 99) | 75 | 64 | 70 | 64 | 74 | 63 | 70 | 62 | 74 | 62 | 69 | 61 |
| Auburn to Elk Grove* (*near W Stockton Blvd / Lewis Stein Rd adjacent to SR 99) | 73 | 64 | 69 | 62 | 72 | 63 | 68 | 60 | 72 | 62 | 67 | 59 |
| Davis to Auburn | 58 | 53 | 76 | 64 | 59 | 52 | 75 | 61 | 59 | 52 | 73 | 60 |
| Elk Grove* to Auburn (*near Laguna Blvd / Bruceville Rd midway between I-5 & SR 99) | 69 | 59 | 74 | 67 | 68 | 59 | 73 | 65 | 68 | 58 | 72 | 63 |
| Elk Grove* to Auburn (*near W Stockton Blvd / Lewis Stein Rd adjacent to SR 99) | 66 | 56 | 71 | 65 | 65 | 56 | 70 | 63 | 64 | 55 | 69 | 61 |

| Origin/Destination | 2049 Add HOT 2 | | | | 2049 Add HOT 3+ | | | | 2049 Add Express Lane | | | |
|--|----------------|---------------------|--------------|---------------------|-----------------|---------------------|--------------|---------------------|-----------------------|---------------------|--------------|---------------------|
| | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | |
| | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes | GP Lanes | HOV / Managed Lanes |
| Auburn to Davis | 85 | 68 | 69 | 63 | 86 | 61 | 71 | 56 | 87 | 58 | 72 | 54 |
| Auburn to Elk Grove* (*near Laguna Blvd / Bruceville Rd midway between I-5 & SR 99) | 84 | 73 | 78 | 72 | 85 | 66 | 80 | 62 | 86 | 63 | 82 | 58 |
| Auburn to Elk Grove* (*near W Stockton Blvd / Lewis Stein Rd adjacent to SR 99) | 82 | 73 | 76 | 69 | 82 | 65 | 78 | 59 | 83 | 62 | 79 | 55 |
| Davis to Auburn | 62 | 54 | 86 | 77 | 64 | 52 | 87 | 66 | 65 | 52 | 88 | 61 |
| Elk Grove* to Auburn (*near Laguna Blvd / Bruceville Rd midway between I-5 & SR 99) | 73 | 63 | 79 | 76 | 75 | 57 | 81 | 66 | 76 | 54 | 82 | 62 |
| Elk Grove* to Auburn (*near W Stockton Blvd / Lewis Stein Rd adjacent to SR 99) | 70 | 60 | 77 | 74 | 71 | 54 | 79 | 65 | 72 | 52 | 80 | 61 |



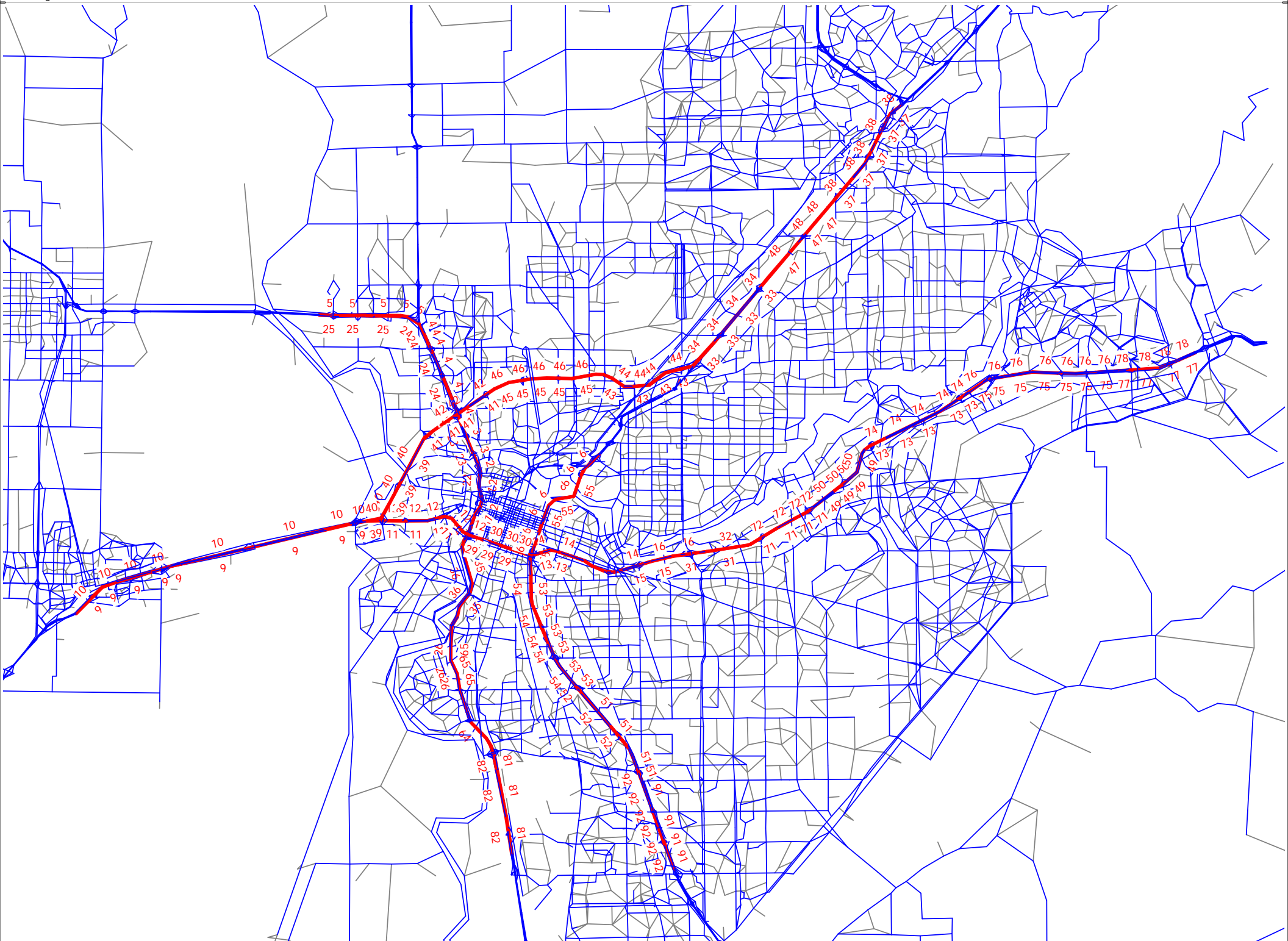






Appendix B:

Toll Segment IDs from SACSIM19 Model



Appendix C:

Detailed Vehicle Volume Tables

Table 3: 2029 I-80/US 50 Vehicle Trips

| I-80 EB at Yolo Causeway | | | | | | | | | | |
|--|---------------------|---------------------|---------------|-------------|---------------------|---------------|-------------|--------------|---------------|-------------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 3,698 | 3,437 | 3,335 | 5,131 | 4,576 | 4,239 | 52,855 | 48,664 | 47,228 |
| | HOV2 | 0 | 324 | 320 | 0 | 540 | 538 | 1,173 | 7,603 | 7,456 |
| | HOV3+ | 0 | 0 | 165 | 0 | 0 | 274 | 704 | 641 | 4,109 |
| | CV | 1,077 | 980 | 959 | 1,033 | 933 | 864 | 16,841 | 15,604 | 15,083 |
| | Total | 4,775 | 4,741 | 4,778 | 6,164 | 6,048 | 5,914 | 71,574 | 72,511 | 73,875 |
| Managed Lanes | SOV | 431 | 681 | 751 | 0 | 385 | 683 | 3,438 | 6,812 | 8,097 |
| | HOV2 | 623 | 285 | 285 | 1,135 | 485 | 499 | 13,115 | 6,110 | 6,318 |
| | HOV3+ | 342 | 351 | 169 | 604 | 629 | 262 | 7,449 | 7,754 | 3,696 |
| | CV | 124 | 211 | 230 | 0 | 83 | 148 | 1,500 | 2,472 | 2,942 |
| | Total | 1,520 | 1,529 | 1,435 | 1,739 | 1,582 | 1,592 | 25,502 | 23,148 | 21,052 |
| All Lanes | SOV | 4,128 | 4,118 | 4,086 | 5,131 | 4,960 | 4,922 | 56,294 | 55,476 | 55,325 |
| | HOV2 | 623 | 609 | 605 | 1,135 | 1,025 | 1,037 | 14,288 | 13,713 | 13,773 |
| | HOV3+ | 342 | 351 | 334 | 604 | 629 | 536 | 8,153 | 8,395 | 7,805 |
| | CV | 1,201 | 1,191 | 1,189 | 1,033 | 1,016 | 1,013 | 18,341 | 18,075 | 18,024 |
| | Total | 6,295 | 6,269 | 6,213 | 7,903 | 7,630 | 7,507 | 97,076 | 95,659 | 94,928 |
| Tolled Vehicles | | 555 | 1,177 | 1,435 | 0 | 953 | 1,592 | 4,938 | 15,394 | 21,053 |
| I-80 WB at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,345 | 4,074 | 3,891 | 4,802 | 4,358 | 4,096 | 52,961 | 50,610 | 48,080 |
| | HOV2 | 0 | 395 | 376 | 0 | 548 | 559 | 1,455 | 8,362 | 7,898 |
| | HOV3+ | 0 | 0 | 259 | 0 | 0 | 277 | 835 | 1,140 | 4,347 |
| | CV | 1,047 | 978 | 905 | 1,061 | 955 | 894 | 16,997 | 16,531 | 15,434 |
| | Total | 5,391 | 5,446 | 5,431 | 5,862 | 5,860 | 5,826 | 72,248 | 76,642 | 75,758 |
| Managed Lanes | SOV | 358 | 556 | 789 | 0 | 371 | 635 | 3,696 | 5,420 | 7,975 |
| | HOV2 | 694 | 246 | 274 | 1,115 | 508 | 497 | 12,911 | 5,538 | 6,005 |
| | HOV3+ | 497 | 529 | 209 | 590 | 603 | 267 | 7,337 | 7,230 | 3,513 |
| | CV | 106 | 164 | 232 | 0 | 86 | 147 | 1,449 | 1,666 | 2,718 |
| | Total | 1,656 | 1,495 | 1,504 | 1,705 | 1,567 | 1,547 | 25,393 | 19,853 | 20,211 |
| All Lanes | SOV | 4,703 | 4,630 | 4,681 | 4,802 | 4,728 | 4,731 | 56,656 | 56,030 | 56,055 |
| | HOV2 | 694 | 641 | 649 | 1,115 | 1,055 | 1,056 | 14,366 | 13,900 | 13,903 |
| | HOV3+ | 497 | 529 | 468 | 590 | 603 | 545 | 8,172 | 8,370 | 7,860 |
| | CV | 1,153 | 1,142 | 1,137 | 1,061 | 1,041 | 1,041 | 18,446 | 18,196 | 18,151 |
| | Total | 7,048 | 6,941 | 6,935 | 7,567 | 7,428 | 7,373 | 97,640 | 96,496 | 95,969 |
| Tolled Vehicles | | 464 | 966 | 1,504 | 0 | 965 | 1,546 | 5,145 | 12,624 | 20,211 |
| I-80 Two-Way Total at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 8,043 | 7,511 | 7,226 | 9,933 | 8,934 | 8,335 | 105,816 | 99,274 | 95,308 |
| | HOV2 | 0 | 719 | 696 | 0 | 1,088 | 1,097 | 2,628 | 15,965 | 15,354 |
| | HOV3+ | 0 | 0 | 424 | 0 | 0 | 551 | 1,539 | 1,781 | 8,456 |
| | CV | 2,124 | 1,958 | 1,864 | 2,094 | 1,888 | 1,758 | 33,838 | 32,135 | 30,517 |
| | Total | 10,166 | 10,187 | 10,209 | 12,026 | 11,908 | 11,740 | 143,822 | 149,153 | 149,633 |
| Managed Lanes | SOV | 789 | 1,237 | 1,540 | 0 | 756 | 1,318 | 7,134 | 12,232 | 16,072 |
| | HOV2 | 1,317 | 531 | 559 | 2,250 | 993 | 996 | 26,026 | 11,648 | 12,323 |
| | HOV3+ | 839 | 880 | 378 | 1,194 | 1,232 | 529 | 14,786 | 14,984 | 7,209 |
| | CV | 230 | 375 | 462 | 0 | 169 | 295 | 2,949 | 4,138 | 5,660 |
| | Total | 3,176 | 3,024 | 2,939 | 3,444 | 3,149 | 3,139 | 50,895 | 43,001 | 41,263 |
| All Lanes | SOV | 8,831 | 8,748 | 8,767 | 9,933 | 9,688 | 9,653 | 112,950 | 111,506 | 111,380 |
| | HOV2 | 1,317 | 1,250 | 1,254 | 2,250 | 2,080 | 2,093 | 28,654 | 27,613 | 27,676 |
| | HOV3+ | 839 | 880 | 802 | 1,194 | 1,232 | 1,081 | 16,325 | 16,765 | 15,665 |
| | CV | 2,354 | 2,333 | 2,326 | 2,094 | 2,057 | 2,054 | 36,787 | 36,271 | 36,175 |
| | Total | 13,343 | 13,210 | 13,148 | 15,470 | 15,058 | 14,880 | 194,716 | 192,155 | 190,897 |
| Tolled Vehicles | | 1,019 | 2,143 | 2,939 | 0 | 1,918 | 3,138 | 10,083 | 28,018 | 41,264 |

Table 3: 2029 I-80/US 50 Vehicle Trips

| I-80 EB at Sacramento River | | | | | | | | | | |
|---|--------------|--------------|--------|-------|--------------|--------|-------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 1,857 | 1,826 | 1,829 | 3,996 | 3,954 | 3,871 | 30,752 | 30,273 | 30,149 |
| | HOV2 | 0 | 312 | 298 | 0 | 365 | 359 | 715 | 6,109 | 5,961 |
| | HOV3+ | 0 | 0 | 192 | 0 | 0 | 176 | 417 | 370 | 3,540 |
| | CV | 820 | 810 | 804 | 753 | 784 | 753 | 11,318 | 11,169 | 11,157 |
| | Total | 2,677 | 2,948 | 3,123 | 4,749 | 5,103 | 5,158 | 43,203 | 47,920 | 50,807 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 1,275 | 1,311 | 1,279 |
| | HOV2 | 306 | 0 | 0 | 757 | 321 | 304 | 6,829 | 1,152 | 1,221 |
| | HOV3+ | 195 | 199 | 0 | 424 | 384 | 181 | 4,135 | 4,154 | 768 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 764 | 837 | 725 |
| | Total | 501 | 199 | 0 | 1,182 | 705 | 485 | 13,004 | 7,454 | 3,993 |
| All Lanes | SOV | 1,857 | 1,826 | 1,829 | 3,996 | 3,954 | 3,871 | 32,027 | 31,583 | 31,429 |
| | HOV2 | 306 | 312 | 298 | 757 | 686 | 663 | 7,545 | 7,261 | 7,182 |
| | HOV3+ | 195 | 199 | 192 | 424 | 384 | 357 | 4,552 | 4,524 | 4,308 |
| | CV | 820 | 810 | 804 | 753 | 784 | 753 | 12,083 | 12,006 | 11,882 |
| | Total | 3,179 | 3,147 | 3,123 | 5,931 | 5,807 | 5,644 | 56,206 | 55,374 | 54,800 |
| Tolled Vehicles | | 0 | 0 | 0 | 0 | 321 | 485 | 2,039 | 3,300 | 3,993 |
| I-80 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,291 | 4,219 | 4,224 | 2,298 | 2,253 | 2,244 | 30,399 | 30,462 | 30,136 |
| | HOV2 | 0 | 122 | 120 | 0 | 301 | 299 | 663 | 4,342 | 3,972 |
| | HOV3+ | 0 | 0 | 64 | 0 | 0 | 156 | 398 | 437 | 2,222 |
| | CV | 856 | 856 | 849 | 753 | 742 | 738 | 11,517 | 11,606 | 11,357 |
| | Total | 5,147 | 5,197 | 5,257 | 3,051 | 3,297 | 3,438 | 42,976 | 46,846 | 47,687 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 2,095 | 1,712 | 2,080 |
| | HOV2 | 515 | 384 | 380 | 545 | 228 | 226 | 6,740 | 2,826 | 3,198 |
| | HOV3+ | 367 | 374 | 289 | 317 | 313 | 142 | 4,138 | 4,129 | 2,159 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 819 | 610 | 809 |
| | Total | 882 | 758 | 669 | 862 | 542 | 369 | 13,792 | 9,276 | 8,247 |
| All Lanes | SOV | 4,291 | 4,219 | 4,224 | 2,298 | 2,253 | 2,244 | 32,494 | 32,174 | 32,217 |
| | HOV2 | 515 | 506 | 500 | 545 | 529 | 525 | 7,403 | 7,167 | 7,170 |
| | HOV3+ | 367 | 374 | 354 | 317 | 313 | 299 | 4,536 | 4,566 | 4,381 |
| | CV | 856 | 856 | 849 | 753 | 742 | 738 | 12,336 | 12,216 | 12,166 |
| | Total | 6,030 | 5,955 | 5,926 | 3,913 | 3,839 | 3,807 | 56,769 | 56,122 | 55,934 |
| Tolled Vehicles | | 0 | 384 | 669 | 0 | 228 | 368 | 2,914 | 5,148 | 8,246 |
| I-80 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 6,148 | 6,045 | 6,053 | 6,294 | 6,207 | 6,115 | 61,151 | 60,735 | 60,285 |
| | HOV2 | 0 | 434 | 418 | 0 | 666 | 658 | 1,378 | 10,451 | 9,933 |
| | HOV3+ | 0 | 0 | 256 | 0 | 0 | 332 | 815 | 807 | 5,762 |
| | CV | 1,676 | 1,666 | 1,653 | 1,506 | 1,526 | 1,491 | 22,835 | 22,775 | 22,514 |
| | Total | 7,824 | 8,145 | 8,380 | 7,800 | 8,400 | 8,596 | 86,179 | 94,766 | 98,494 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 3,370 | 3,023 | 3,359 |
| | HOV2 | 821 | 384 | 380 | 1,302 | 549 | 530 | 13,569 | 3,978 | 4,419 |
| | HOV3+ | 562 | 573 | 289 | 741 | 697 | 323 | 8,273 | 8,283 | 2,927 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 1,583 | 1,447 | 1,534 |
| | Total | 1,383 | 957 | 669 | 2,044 | 1,247 | 854 | 26,796 | 16,730 | 12,240 |
| All Lanes | SOV | 6,148 | 6,045 | 6,053 | 6,294 | 6,207 | 6,115 | 64,521 | 63,757 | 63,646 |
| | HOV2 | 821 | 818 | 798 | 1,302 | 1,215 | 1,188 | 14,948 | 14,428 | 14,352 |
| | HOV3+ | 562 | 573 | 546 | 741 | 697 | 656 | 9,088 | 9,090 | 8,689 |
| | CV | 1,676 | 1,666 | 1,653 | 1,506 | 1,526 | 1,491 | 24,419 | 24,222 | 24,048 |
| | Total | 9,209 | 9,102 | 9,049 | 9,844 | 9,646 | 9,451 | 112,975 | 111,496 | 110,734 |
| Tolled Vehicles | | 0 | 384 | 669 | 0 | 549 | 853 | 4,953 | 8,448 | 12,239 |

Table 3: 2029 I-80/US 50 Vehicle Trips

| US 50 EB at Sacramento River | | | | | | | | | | |
|--|--------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,502 | 4,247 | 4,050 | 5,695 | 5,267 | 5,018 | 60,223 | 56,016 | 53,891 |
| | HOV2 | 91 | 503 | 501 | 65 | 668 | 650 | 3,752 | 9,966 | 10,080 |
| | HOV3+ | 58 | 60 | 295 | 34 | 61 | 333 | 2,072 | 2,068 | 5,587 |
| | CV | 1,426 | 1,320 | 1,255 | 1,235 | 1,116 | 1,048 | 21,007 | 19,445 | 18,530 |
| | Total | 6,077 | 6,130 | 6,103 | 7,029 | 7,112 | 7,049 | 87,055 | 87,495 | 88,088 |
| Managed Lanes | SOV | 232 | 503 | 686 | 0 | 411 | 648 | 3,403 | 7,114 | 9,184 |
| | HOV2 | 785 | 316 | 328 | 1,121 | 408 | 460 | 12,443 | 5,416 | 5,452 |
| | HOV3+ | 493 | 511 | 235 | 638 | 667 | 274 | 7,355 | 7,806 | 3,431 |
| | CV | 74 | 179 | 240 | 0 | 114 | 182 | 2,140 | 3,454 | 4,367 |
| | Total | 1,584 | 1,508 | 1,489 | 1,758 | 1,600 | 1,566 | 25,341 | 23,790 | 22,435 |
| All Lanes | SOV | 4,734 | 4,750 | 4,736 | 5,695 | 5,678 | 5,666 | 63,626 | 63,130 | 63,075 |
| | HOV2 | 876 | 819 | 830 | 1,186 | 1,075 | 1,111 | 16,195 | 15,381 | 15,533 |
| | HOV3+ | 551 | 571 | 531 | 671 | 728 | 607 | 9,428 | 9,875 | 9,018 |
| | CV | 1,500 | 1,498 | 1,495 | 1,235 | 1,230 | 1,230 | 23,148 | 22,899 | 22,897 |
| | Total | 7,661 | 7,638 | 7,591 | 8,787 | 8,712 | 8,615 | 112,397 | 111,285 | 110,523 |
| Tolled Vehicles | | 306 | 998 | 1,489 | 0 | 933 | 1,564 | 5,543 | 15,984 | 22,434 |
| US 50 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,674 | 4,469 | 4,328 | 5,086 | 4,758 | 4,570 | 56,109 | 52,508 | 50,850 |
| | HOV2 | 229 | 456 | 469 | 324 | 774 | 761 | 5,647 | 10,072 | 10,036 |
| | HOV3+ | 148 | 162 | 301 | 182 | 203 | 404 | 3,375 | 3,488 | 5,706 |
| | CV | 1,151 | 1,088 | 1,040 | 1,361 | 1,249 | 1,187 | 19,784 | 18,478 | 17,693 |
| | Total | 6,201 | 6,175 | 6,139 | 6,953 | 6,984 | 6,922 | 84,916 | 84,545 | 84,286 |
| Managed Lanes | SOV | 532 | 695 | 818 | 60 | 478 | 589 | 6,461 | 9,760 | 11,275 |
| | HOV2 | 515 | 218 | 223 | 1,013 | 418 | 437 | 10,254 | 5,121 | 5,177 |
| | HOV3+ | 339 | 367 | 162 | 560 | 536 | 250 | 5,864 | 6,043 | 3,144 |
| | CV | 173 | 225 | 265 | 21 | 163 | 194 | 3,122 | 4,309 | 4,991 |
| | Total | 1,559 | 1,506 | 1,469 | 1,654 | 1,595 | 1,470 | 25,701 | 25,233 | 24,588 |
| All Lanes | SOV | 5,205 | 5,164 | 5,147 | 5,146 | 5,236 | 5,159 | 62,571 | 62,268 | 62,125 |
| | HOV2 | 744 | 675 | 692 | 1,338 | 1,192 | 1,198 | 15,901 | 15,193 | 15,214 |
| | HOV3+ | 487 | 529 | 464 | 742 | 738 | 654 | 9,238 | 9,531 | 8,850 |
| | CV | 1,324 | 1,313 | 1,306 | 1,381 | 1,412 | 1,381 | 22,906 | 22,786 | 22,685 |
| | Total | 7,760 | 7,681 | 7,609 | 8,607 | 8,579 | 8,392 | 110,617 | 109,778 | 108,873 |
| Tolled Vehicles | | 705 | 1,138 | 1,468 | 81 | 1,059 | 1,470 | 9,583 | 19,190 | 24,587 |
| US 50 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 9,176 | 8,716 | 8,378 | 10,781 | 10,025 | 9,588 | 116,332 | 108,524 | 104,741 |
| | HOV2 | 320 | 959 | 970 | 389 | 1,442 | 1,411 | 9,399 | 20,038 | 20,116 |
| | HOV3+ | 206 | 222 | 596 | 216 | 264 | 737 | 5,447 | 5,556 | 11,293 |
| | CV | 2,577 | 2,408 | 2,295 | 2,596 | 2,365 | 2,235 | 40,791 | 37,923 | 36,223 |
| | Total | 12,278 | 12,305 | 12,242 | 13,982 | 14,096 | 13,971 | 171,971 | 172,040 | 172,374 |
| Managed Lanes | SOV | 764 | 1,198 | 1,504 | 60 | 889 | 1,237 | 9,864 | 16,874 | 20,459 |
| | HOV2 | 1,300 | 534 | 551 | 2,134 | 826 | 897 | 22,697 | 10,537 | 10,629 |
| | HOV3+ | 832 | 878 | 397 | 1,198 | 1,203 | 524 | 13,219 | 13,849 | 6,575 |
| | CV | 247 | 404 | 505 | 21 | 277 | 376 | 5,262 | 7,763 | 9,358 |
| | Total | 3,143 | 3,014 | 2,958 | 3,412 | 3,195 | 3,036 | 51,042 | 49,023 | 47,023 |
| All Lanes | SOV | 9,939 | 9,914 | 9,883 | 10,841 | 10,914 | 10,825 | 126,197 | 125,398 | 125,200 |
| | HOV2 | 1,620 | 1,494 | 1,522 | 2,524 | 2,267 | 2,309 | 32,096 | 30,574 | 30,747 |
| | HOV3+ | 1,038 | 1,100 | 995 | 1,413 | 1,466 | 1,261 | 18,666 | 19,406 | 17,868 |
| | CV | 2,824 | 2,811 | 2,801 | 2,616 | 2,642 | 2,611 | 46,054 | 45,685 | 45,582 |
| | Total | 15,421 | 15,319 | 15,200 | 17,394 | 17,291 | 17,007 | 223,014 | 221,063 | 219,396 |
| Tolled Vehicles | | 1,011 | 2,136 | 2,957 | 81 | 1,992 | 3,034 | 15,126 | 35,174 | 47,021 |

Table 4: 2049 I-80/US 50 Vehicle Trips

| I-80 EB at Yolo Causeway | | | | | | | | | | |
|--|---------------------|---------------------|---------------|-------------|---------------------|---------------|-------------|--------------|---------------|-------------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,003 | 3,819 | 3,624 | 5,479 | 5,055 | 4,674 | 57,223 | 51,698 | 50,267 |
| | HOV2 | 0 | 346 | 354 | 0 | 582 | 583 | 1,475 | 9,524 | 8,675 |
| | HOV3+ | 0 | 0 | 219 | 0 | 0 | 325 | 924 | 1,324 | 5,065 |
| | CV | 1,030 | 962 | 916 | 980 | 924 | 851 | 17,237 | 15,440 | 15,124 |
| | Total | 5,034 | 5,126 | 5,114 | 6,459 | 6,562 | 6,433 | 76,860 | 77,987 | 79,131 |
| Managed Lanes | SOV | 440 | 631 | 749 | 0 | 158 | 513 | 3,800 | 7,706 | 9,160 |
| | HOV2 | 717 | 335 | 332 | 1,327 | 525 | 555 | 14,675 | 5,689 | 6,839 |
| | HOV3+ | 444 | 459 | 217 | 742 | 918 | 318 | 8,724 | 9,151 | 4,197 |
| | CV | 125 | 181 | 223 | 0 | 32 | 104 | 1,384 | 2,898 | 3,147 |
| | Total | 1,726 | 1,606 | 1,521 | 2,069 | 1,634 | 1,491 | 28,583 | 25,444 | 23,343 |
| All Lanes | SOV | 4,443 | 4,450 | 4,373 | 5,479 | 5,213 | 5,188 | 61,022 | 59,404 | 59,427 |
| | HOV2 | 717 | 681 | 687 | 1,327 | 1,107 | 1,138 | 16,150 | 15,213 | 15,514 |
| | HOV3+ | 444 | 459 | 436 | 742 | 919 | 643 | 9,648 | 10,475 | 9,262 |
| | CV | 1,155 | 1,143 | 1,139 | 980 | 956 | 955 | 18,621 | 18,338 | 18,271 |
| | Total | 6,760 | 6,733 | 6,635 | 8,528 | 8,195 | 7,924 | 105,443 | 103,431 | 102,474 |
| Tolled Vehicles | | 565 | 1,147 | 1,521 | 0 | 715 | 1,490 | 5,184 | 16,293 | 23,343 |
| I-80 WB at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,820 | 4,470 | 4,136 | 5,112 | 4,604 | 4,411 | 58,618 | 55,279 | 50,747 |
| | HOV2 | 0 | 393 | 422 | 0 | 614 | 599 | 2,061 | 9,514 | 9,103 |
| | HOV3+ | 0 | 0 | 295 | 0 | 0 | 310 | 1,244 | 1,542 | 5,240 |
| | CV | 1,046 | 948 | 858 | 1,007 | 909 | 859 | 17,783 | 16,651 | 15,237 |
| | Total | 5,866 | 5,811 | 5,712 | 6,119 | 6,127 | 6,180 | 79,706 | 82,987 | 80,326 |
| Managed Lanes | SOV | 172 | 493 | 821 | 0 | 347 | 549 | 2,725 | 5,166 | 9,680 |
| | HOV2 | 785 | 278 | 300 | 1,309 | 550 | 570 | 14,313 | 5,940 | 6,631 |
| | HOV3+ | 598 | 650 | 238 | 709 | 745 | 315 | 8,425 | 8,527 | 4,032 |
| | CV | 48 | 135 | 225 | 0 | 76 | 122 | 1,028 | 1,902 | 3,244 |
| | Total | 1,603 | 1,556 | 1,583 | 2,017 | 1,718 | 1,555 | 26,492 | 21,535 | 23,587 |
| All Lanes | SOV | 4,992 | 4,963 | 4,957 | 5,112 | 4,951 | 4,960 | 61,344 | 60,445 | 60,427 |
| | HOV2 | 785 | 671 | 722 | 1,309 | 1,164 | 1,169 | 16,373 | 15,454 | 15,734 |
| | HOV3+ | 598 | 650 | 533 | 709 | 745 | 626 | 9,669 | 10,069 | 9,272 |
| | CV | 1,094 | 1,083 | 1,083 | 1,007 | 985 | 981 | 18,812 | 18,553 | 18,481 |
| | Total | 7,469 | 7,367 | 7,295 | 8,136 | 7,845 | 7,735 | 106,198 | 104,522 | 103,913 |
| Tolled Vehicles | | 220 | 906 | 1,584 | 0 | 973 | 1,556 | 3,753 | 13,008 | 23,587 |
| I-80 Two-Way Total at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 8,823 | 8,289 | 7,760 | 10,591 | 9,659 | 9,085 | 115,841 | 106,977 | 101,014 |
| | HOV2 | 0 | 739 | 776 | 0 | 1,196 | 1,182 | 3,536 | 19,038 | 17,778 |
| | HOV3+ | 0 | 0 | 514 | 0 | 0 | 635 | 2,168 | 2,866 | 10,305 |
| | CV | 2,076 | 1,910 | 1,774 | 1,987 | 1,833 | 1,710 | 35,020 | 32,091 | 30,361 |
| | Total | 10,900 | 10,937 | 10,826 | 12,578 | 12,689 | 12,613 | 156,566 | 160,974 | 159,457 |
| Managed Lanes | SOV | 612 | 1,124 | 1,570 | 0 | 505 | 1,062 | 6,525 | 12,872 | 18,840 |
| | HOV2 | 1,502 | 613 | 632 | 2,636 | 1,075 | 1,125 | 28,988 | 11,629 | 13,470 |
| | HOV3+ | 1,042 | 1,109 | 455 | 1,451 | 1,663 | 633 | 17,149 | 17,678 | 8,229 |
| | CV | 173 | 316 | 448 | 0 | 108 | 226 | 2,412 | 4,800 | 6,391 |
| | Total | 3,329 | 3,162 | 3,104 | 4,086 | 3,352 | 3,046 | 55,075 | 46,979 | 46,930 |
| All Lanes | SOV | 9,435 | 9,413 | 9,330 | 10,591 | 10,164 | 10,148 | 122,366 | 119,849 | 119,854 |
| | HOV2 | 1,502 | 1,352 | 1,409 | 2,636 | 2,271 | 2,307 | 32,523 | 30,667 | 31,248 |
| | HOV3+ | 1,042 | 1,109 | 969 | 1,451 | 1,664 | 1,269 | 19,317 | 20,544 | 18,534 |
| | CV | 2,249 | 2,226 | 2,222 | 1,987 | 1,941 | 1,936 | 37,433 | 36,891 | 36,752 |
| | Total | 14,229 | 14,100 | 13,930 | 16,664 | 16,040 | 15,659 | 211,641 | 207,953 | 206,387 |
| Tolled Vehicles | | 785 | 2,053 | 3,105 | 0 | 1,688 | 3,046 | 8,937 | 29,301 | 46,930 |

Table 4: 2049 I-80/US 50 Vehicle Trips

| I-80 EB at Sacramento River | | | | | | | | | | |
|---|--------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 2,508 | 2,466 | 2,335 | 4,632 | 4,092 | 3,807 | 37,074 | 35,357 | 34,207 |
| | HOV2 | 0 | 231 | 236 | 0 | 482 | 448 | 922 | 5,474 | 5,387 |
| | HOV3+ | 0 | 0 | 162 | 0 | 0 | 237 | 553 | 507 | 3,153 |
| | CV | 894 | 887 | 859 | 805 | 720 | 659 | 12,891 | 12,575 | 12,211 |
| | Total | 3,402 | 3,585 | 3,591 | 5,437 | 5,294 | 5,150 | 51,439 | 53,914 | 54,959 |
| Managed Lanes | SOV | 0 | 0 | 64 | 100 | 547 | 730 | 1,621 | 2,549 | 3,249 |
| | HOV2 | 405 | 164 | 171 | 973 | 396 | 379 | 8,621 | 3,591 | 3,660 |
| | HOV3+ | 281 | 306 | 137 | 560 | 518 | 239 | 5,372 | 5,408 | 2,470 |
| | CV | 0 | 0 | 22 | 23 | 131 | 182 | 850 | 1,085 | 1,307 |
| | Total | 686 | 470 | 394 | 1,656 | 1,592 | 1,530 | 16,463 | 12,633 | 10,687 |
| All Lanes | SOV | 2,508 | 2,466 | 2,399 | 4,732 | 4,639 | 4,538 | 38,694 | 37,906 | 37,456 |
| | HOV2 | 405 | 395 | 407 | 973 | 878 | 826 | 9,542 | 9,065 | 9,047 |
| | HOV3+ | 281 | 306 | 299 | 560 | 518 | 476 | 5,925 | 5,916 | 5,623 |
| | CV | 894 | 887 | 881 | 828 | 851 | 840 | 13,741 | 13,660 | 13,519 |
| | Total | 4,088 | 4,055 | 3,986 | 7,093 | 6,885 | 6,680 | 67,902 | 66,547 | 65,645 |
| Tolled Vehicles | | 0 | 164 | 394 | 123 | 1,074 | 1,530 | 2,471 | 7,225 | 10,686 |
| I-80 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,516 | 4,287 | 4,099 | 2,989 | 2,792 | 2,631 | 36,438 | 35,229 | 34,204 |
| | HOV2 | 0 | 353 | 364 | 0 | 411 | 404 | 900 | 5,532 | 5,389 |
| | HOV3+ | 0 | 0 | 227 | 0 | 0 | 223 | 554 | 542 | 3,260 |
| | CV | 808 | 774 | 715 | 842 | 787 | 733 | 13,000 | 12,700 | 12,303 |
| | Total | 5,324 | 5,414 | 5,405 | 3,830 | 3,990 | 3,990 | 50,893 | 54,003 | 55,157 |
| Managed Lanes | SOV | 426 | 670 | 833 | 0 | 114 | 255 | 2,956 | 3,632 | 4,375 |
| | HOV2 | 697 | 238 | 250 | 740 | 299 | 290 | 8,478 | 3,361 | 3,574 |
| | HOV3+ | 500 | 463 | 219 | 435 | 450 | 188 | 5,432 | 5,505 | 2,507 |
| | CV | 104 | 169 | 217 | 0 | 42 | 92 | 1,078 | 1,286 | 1,520 |
| | Total | 1,727 | 1,540 | 1,518 | 1,175 | 905 | 825 | 17,945 | 13,784 | 11,977 |
| All Lanes | SOV | 4,941 | 4,957 | 4,931 | 2,989 | 2,906 | 2,886 | 39,394 | 38,861 | 38,579 |
| | HOV2 | 697 | 591 | 614 | 740 | 710 | 694 | 9,379 | 8,893 | 8,963 |
| | HOV3+ | 500 | 463 | 447 | 435 | 450 | 411 | 5,986 | 6,047 | 5,768 |
| | CV | 912 | 943 | 932 | 842 | 829 | 824 | 14,078 | 13,985 | 13,823 |
| | Total | 7,050 | 6,954 | 6,923 | 5,005 | 4,895 | 4,815 | 68,837 | 67,787 | 67,133 |
| Tolled Vehicles | | 530 | 1,077 | 1,519 | 0 | 455 | 825 | 4,034 | 8,279 | 11,976 |
| I-80 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 7,024 | 6,753 | 6,434 | 7,621 | 6,884 | 6,438 | 73,512 | 70,586 | 68,411 |
| | HOV2 | 0 | 584 | 600 | 0 | 893 | 852 | 1,822 | 11,006 | 10,776 |
| | HOV3+ | 0 | 0 | 389 | 0 | 0 | 460 | 1,107 | 1,049 | 6,413 |
| | CV | 1,702 | 1,661 | 1,574 | 1,647 | 1,507 | 1,392 | 25,891 | 25,275 | 24,514 |
| | Total | 8,726 | 8,999 | 8,996 | 9,267 | 9,284 | 9,140 | 102,332 | 107,917 | 110,116 |
| Managed Lanes | SOV | 426 | 670 | 897 | 100 | 661 | 985 | 4,577 | 6,181 | 7,624 |
| | HOV2 | 1,102 | 402 | 421 | 1,713 | 695 | 669 | 17,099 | 6,952 | 7,234 |
| | HOV3+ | 781 | 769 | 356 | 995 | 968 | 427 | 10,804 | 10,913 | 4,977 |
| | CV | 104 | 169 | 239 | 23 | 173 | 274 | 1,928 | 2,371 | 2,827 |
| | Total | 2,413 | 2,010 | 1,912 | 2,831 | 2,497 | 2,355 | 34,408 | 26,417 | 22,664 |
| All Lanes | SOV | 7,449 | 7,423 | 7,330 | 7,721 | 7,545 | 7,424 | 78,088 | 76,767 | 76,035 |
| | HOV2 | 1,102 | 986 | 1,021 | 1,713 | 1,588 | 1,520 | 18,921 | 17,958 | 18,010 |
| | HOV3+ | 781 | 769 | 746 | 995 | 968 | 887 | 11,911 | 11,963 | 11,391 |
| | CV | 1,806 | 1,830 | 1,813 | 1,670 | 1,680 | 1,664 | 27,819 | 27,645 | 27,342 |
| | Total | 11,138 | 11,009 | 10,909 | 12,098 | 11,780 | 11,495 | 136,739 | 134,334 | 132,778 |
| Tolled Vehicles | | 530 | 1,241 | 1,913 | 123 | 1,529 | 2,355 | 6,505 | 15,504 | 22,662 |

Table 4: 2049 I-80/US 50 Vehicle Trips

| US 50 EB at Sacramento River | | | | | | | | | | |
|--|--------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 5,348 | 5,219 | 4,927 | 6,501 | 6,248 | 5,752 | 68,601 | 64,625 | 62,341 |
| | HOV2 | 42 | 532 | 555 | 74 | 757 | 730 | 4,223 | 11,955 | 11,252 |
| | HOV3+ | 27 | 13 | 338 | 36 | 1 | 379 | 2,258 | 2,213 | 6,327 |
| | CV | 1,627 | 1,579 | 1,444 | 1,303 | 1,232 | 1,135 | 24,195 | 22,452 | 21,406 |
| | Total | 7,044 | 7,343 | 7,265 | 7,914 | 8,238 | 7,995 | 99,276 | 101,246 | 101,327 |
| Managed Lanes | SOV | 0 | 203 | 558 | 0 | 0 | 535 | 3,227 | 5,900 | 8,834 |
| | HOV2 | 1,180 | 471 | 465 | 1,407 | 402 | 581 | 15,212 | 5,676 | 7,024 |
| | HOV3+ | 797 | 836 | 360 | 820 | 1,175 | 372 | 9,373 | 11,127 | 4,758 |
| | CV | 0 | 75 | 216 | 0 | 0 | 149 | 1,927 | 3,335 | 4,429 |
| | Total | 1,977 | 1,585 | 1,600 | 2,227 | 1,577 | 1,637 | 29,740 | 26,038 | 25,044 |
| All Lanes | SOV | 5,348 | 5,422 | 5,485 | 6,501 | 6,248 | 6,287 | 71,828 | 70,524 | 71,175 |
| | HOV2 | 1,222 | 1,003 | 1,020 | 1,481 | 1,160 | 1,311 | 19,435 | 17,632 | 18,276 |
| | HOV3+ | 824 | 849 | 698 | 856 | 1,176 | 751 | 11,631 | 13,340 | 11,085 |
| | CV | 1,627 | 1,654 | 1,660 | 1,303 | 1,232 | 1,284 | 26,122 | 25,788 | 25,834 |
| | Total | 9,021 | 8,928 | 8,864 | 10,141 | 9,816 | 9,632 | 129,016 | 127,284 | 126,371 |
| Tolled Vehicles | | 0 | 749 | 1,599 | 0 | 402 | 1,637 | 5,154 | 14,911 | 25,045 |
| US 50 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 5,572 | 5,345 | 5,096 | 5,709 | 5,321 | 5,169 | 65,167 | 62,027 | 60,305 |
| | HOV2 | 308 | 536 | 587 | 453 | 879 | 899 | 7,862 | 12,218 | 12,171 |
| | HOV3+ | 212 | 248 | 386 | 271 | 323 | 511 | 4,775 | 5,275 | 7,183 |
| | CV | 1,279 | 1,215 | 1,165 | 1,473 | 1,354 | 1,298 | 23,711 | 22,473 | 21,775 |
| | Total | 7,372 | 7,345 | 7,233 | 7,905 | 7,877 | 7,878 | 101,514 | 101,993 | 101,433 |
| Managed Lanes | SOV | 504 | 699 | 850 | 0 | 356 | 560 | 6,712 | 9,534 | 11,466 |
| | HOV2 | 565 | 219 | 220 | 1,191 | 484 | 475 | 11,470 | 5,645 | 5,995 |
| | HOV3+ | 406 | 449 | 177 | 684 | 649 | 273 | 6,783 | 6,889 | 3,729 |
| | CV | 148 | 197 | 248 | 0 | 122 | 190 | 3,074 | 4,208 | 4,925 |
| | Total | 1,622 | 1,564 | 1,495 | 1,875 | 1,610 | 1,498 | 28,039 | 26,276 | 26,114 |
| All Lanes | SOV | 6,075 | 6,045 | 5,945 | 5,709 | 5,677 | 5,729 | 71,878 | 71,561 | 71,771 |
| | HOV2 | 873 | 755 | 807 | 1,644 | 1,363 | 1,375 | 19,332 | 17,863 | 18,165 |
| | HOV3+ | 618 | 697 | 563 | 955 | 971 | 784 | 11,558 | 12,164 | 10,912 |
| | CV | 1,427 | 1,412 | 1,413 | 1,473 | 1,475 | 1,488 | 26,784 | 26,681 | 26,700 |
| | Total | 8,994 | 8,909 | 8,728 | 9,780 | 9,486 | 9,376 | 129,554 | 128,269 | 127,547 |
| Tolled Vehicles | | 652 | 1,115 | 1,495 | 0 | 962 | 1,498 | 9,786 | 19,387 | 26,115 |
| US 50 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 10,920 | 10,564 | 10,023 | 12,210 | 11,569 | 10,921 | 133,768 | 126,652 | 122,646 |
| | HOV2 | 350 | 1,068 | 1,142 | 527 | 1,636 | 1,629 | 12,085 | 24,173 | 23,423 |
| | HOV3+ | 239 | 261 | 724 | 307 | 324 | 890 | 7,033 | 7,488 | 13,510 |
| | CV | 2,906 | 2,794 | 2,609 | 2,776 | 2,586 | 2,433 | 47,906 | 44,925 | 43,181 |
| | Total | 14,416 | 14,688 | 14,498 | 15,819 | 16,115 | 15,873 | 200,790 | 203,239 | 202,760 |
| Managed Lanes | SOV | 504 | 902 | 1,408 | 0 | 356 | 1,095 | 9,939 | 15,434 | 20,300 |
| | HOV2 | 1,745 | 690 | 685 | 2,598 | 886 | 1,056 | 26,682 | 11,321 | 13,019 |
| | HOV3+ | 1,203 | 1,285 | 537 | 1,504 | 1,824 | 645 | 16,156 | 18,016 | 8,487 |
| | CV | 148 | 272 | 464 | 0 | 122 | 339 | 5,001 | 7,543 | 9,354 |
| | Total | 3,599 | 3,149 | 3,095 | 4,102 | 3,187 | 3,135 | 57,779 | 52,314 | 51,158 |
| All Lanes | SOV | 11,423 | 11,467 | 11,430 | 12,210 | 11,925 | 12,016 | 143,706 | 142,085 | 142,946 |
| | HOV2 | 2,095 | 1,758 | 1,827 | 3,125 | 2,523 | 2,686 | 38,767 | 35,495 | 36,441 |
| | HOV3+ | 1,442 | 1,546 | 1,261 | 1,811 | 2,147 | 1,535 | 23,189 | 25,504 | 21,997 |
| | CV | 3,054 | 3,066 | 3,073 | 2,776 | 2,707 | 2,772 | 52,906 | 52,469 | 52,534 |
| | Total | 18,015 | 17,837 | 17,592 | 19,921 | 19,302 | 19,008 | 258,570 | 255,553 | 253,918 |
| Tolled Vehicles | | 652 | 1,864 | 3,094 | 0 | 1,364 | 3,135 | 14,940 | 34,298 | 51,160 |

Appendix D:

Detailed Person Volume Tables

Table 5: 2029 I-80/US 50 Person Trips

| I-80 EB at Yolo Causeway | | | | | | | | | | |
|-------------------------------------|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 3,698 | 3,437 | 3,335 | 5,131 | 4,576 | 4,239 | 52,855 | 48,664 | 47,228 |
| | HOV2 | 0 | 648 | 640 | 0 | 1,080 | 1,076 | 2,346 | 15,206 | 14,912 |
| | HOV3+ | 0 | 0 | 561 | 0 | 0 | 932 | 2,394 | 2,179 | 13,971 |
| | CV | 1,077 | 980 | 959 | 1,033 | 933 | 864 | 16,841 | 15,604 | 15,083 |
| | Total | 4,775 | 5,065 | 5,495 | 6,164 | 6,589 | 7,111 | 74,436 | 81,653 | 91,194 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.15 | 1.00 | 1.09 | 1.20 | 1.04 | 1.13 | 1.23 |
| Managed Lanes | SOV | 431 | 681 | 751 | 0 | 385 | 683 | 3,438 | 6,812 | 8,097 |
| | HOV2 | 1,246 | 570 | 570 | 2,270 | 970 | 998 | 26,230 | 12,220 | 12,636 |
| | HOV3+ | 1,163 | 1,193 | 575 | 2,054 | 2,139 | 891 | 25,327 | 26,364 | 12,566 |
| | CV | 124 | 211 | 230 | 0 | 83 | 148 | 1,500 | 2,472 | 2,942 |
| | Total | 2,964 | 2,655 | 2,126 | 4,324 | 3,577 | 2,720 | 56,495 | 47,868 | 36,241 |
| | Avg. Auto Occupancy | 1.95 | 1.74 | 1.48 | 2.49 | 2.26 | 1.71 | 2.22 | 2.07 | 1.72 |
| All Lanes | SOV | 4,128 | 4,118 | 4,086 | 5,131 | 4,960 | 4,922 | 56,294 | 55,476 | 55,325 |
| | HOV2 | 1,246 | 1,218 | 1,210 | 2,270 | 2,050 | 2,074 | 28,576 | 27,426 | 27,546 |
| | HOV3+ | 1,163 | 1,193 | 1,136 | 2,054 | 2,139 | 1,822 | 27,720 | 28,543 | 26,537 |
| | CV | 1,201 | 1,191 | 1,189 | 1,033 | 1,016 | 1,013 | 18,341 | 18,075 | 18,024 |
| | Total | 7,738 | 7,720 | 7,621 | 10,488 | 10,165 | 9,831 | 130,931 | 129,520 | 127,432 |
| | Avg. Auto Occupancy | 1.23 | 1.23 | 1.23 | 1.33 | 1.33 | 1.31 | 1.35 | 1.35 | 1.34 |
| I-80 WB at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,345 | 4,074 | 3,891 | 4,802 | 4,358 | 4,096 | 52,961 | 50,610 | 48,080 |
| | HOV2 | 0 | 790 | 752 | 0 | 1,096 | 1,118 | 2,910 | 16,724 | 15,796 |
| | HOV3+ | 0 | 0 | 881 | 0 | 0 | 942 | 2,839 | 3,876 | 14,780 |
| | CV | 1,047 | 978 | 905 | 1,061 | 955 | 894 | 16,997 | 16,531 | 15,434 |
| | Total | 5,392 | 5,842 | 6,429 | 5,863 | 6,409 | 7,050 | 75,707 | 87,741 | 94,090 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.18 | 1.00 | 1.09 | 1.21 | 1.05 | 1.14 | 1.24 |
| Managed Lanes | SOV | 358 | 556 | 789 | 0 | 371 | 635 | 3,696 | 5,420 | 7,975 |
| | HOV2 | 1,388 | 492 | 548 | 2,230 | 1,016 | 994 | 25,822 | 11,076 | 12,010 |
| | HOV3+ | 1,690 | 1,799 | 711 | 2,006 | 2,050 | 908 | 24,946 | 24,582 | 11,944 |
| | CV | 106 | 164 | 232 | 0 | 86 | 147 | 1,449 | 1,666 | 2,718 |
| | Total | 3,542 | 3,011 | 2,280 | 4,236 | 3,523 | 2,684 | 55,913 | 42,744 | 34,647 |
| | Avg. Auto Occupancy | 2.14 | 2.01 | 1.52 | 2.48 | 2.25 | 1.73 | 2.20 | 2.15 | 1.71 |
| All Lanes | SOV | 4,703 | 4,630 | 4,681 | 4,802 | 4,728 | 4,731 | 56,656 | 56,030 | 56,055 |
| | HOV2 | 1,388 | 1,282 | 1,298 | 2,230 | 2,110 | 2,112 | 28,732 | 27,800 | 27,806 |
| | HOV3+ | 1,690 | 1,799 | 1,591 | 2,006 | 2,050 | 1,853 | 27,785 | 28,458 | 26,724 |
| | CV | 1,153 | 1,142 | 1,137 | 1,061 | 1,041 | 1,041 | 18,446 | 18,196 | 18,151 |
| | Total | 8,934 | 8,853 | 8,707 | 10,099 | 9,929 | 9,737 | 131,619 | 130,484 | 128,736 |
| | Avg. Auto Occupancy | 1.27 | 1.28 | 1.26 | 1.33 | 1.34 | 1.32 | 1.35 | 1.35 | 1.34 |
| I-80 Two-Way Total at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 8,043 | 7,511 | 7,226 | 9,933 | 8,934 | 8,335 | 105,816 | 99,274 | 95,308 |
| | HOV2 | 0 | 1,438 | 1,392 | 0 | 2,176 | 2,194 | 5,256 | 31,930 | 30,708 |
| | HOV3+ | 0 | 0 | 1,442 | 0 | 0 | 1,873 | 5,233 | 6,055 | 28,750 |
| | CV | 2,124 | 1,958 | 1,864 | 2,094 | 1,888 | 1,758 | 33,838 | 32,135 | 30,517 |
| | Total | 10,167 | 10,907 | 11,924 | 12,027 | 12,998 | 14,160 | 150,143 | 169,394 | 185,283 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.17 | 1.00 | 1.09 | 1.21 | 1.04 | 1.14 | 1.24 |
| Managed Lanes | SOV | 789 | 1,237 | 1,540 | 0 | 756 | 1,318 | 7,134 | 12,232 | 16,072 |
| | HOV2 | 2,634 | 1,062 | 1,118 | 4,500 | 1,986 | 1,992 | 52,052 | 23,296 | 24,646 |
| | HOV3+ | 2,853 | 2,992 | 1,285 | 4,060 | 4,189 | 1,799 | 50,272 | 50,946 | 24,511 |
| | CV | 230 | 375 | 462 | 0 | 169 | 295 | 2,949 | 4,138 | 5,660 |
| | Total | 6,506 | 5,666 | 4,405 | 8,560 | 7,100 | 5,404 | 112,407 | 90,612 | 70,889 |
| | Avg. Auto Occupancy | 2.05 | 1.87 | 1.50 | 2.49 | 2.25 | 1.72 | 2.21 | 2.11 | 1.72 |
| All Lanes | SOV | 8,831 | 8,748 | 8,767 | 9,933 | 9,688 | 9,653 | 112,950 | 111,506 | 111,380 |
| | HOV2 | 2,634 | 2,500 | 2,508 | 4,500 | 4,160 | 4,186 | 57,308 | 55,226 | 55,352 |
| | HOV3+ | 2,853 | 2,992 | 2,727 | 4,060 | 4,189 | 3,675 | 55,505 | 57,001 | 53,261 |
| | CV | 2,354 | 2,333 | 2,326 | 2,094 | 2,057 | 2,054 | 36,787 | 36,271 | 36,175 |
| | Total | 16,672 | 16,573 | 16,328 | 20,587 | 20,094 | 19,568 | 262,550 | 260,004 | 256,168 |
| | Avg. Auto Occupancy | 1.25 | 1.25 | 1.24 | 1.33 | 1.33 | 1.32 | 1.35 | 1.35 | 1.34 |

Table 5: 2029 I-80/US 50 Person Trips

| I-80 EB at Sacramento River | | | | | | | | | | |
|--|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 1,857 | 1,826 | 1,829 | 3,996 | 3,954 | 3,871 | 30,752 | 30,273 | 30,149 |
| | HOV2 | 0 | 624 | 596 | 0 | 730 | 718 | 1,430 | 12,218 | 11,922 |
| | HOV3+ | 0 | 0 | 653 | 0 | 0 | 598 | 1,418 | 1,258 | 12,036 |
| | CV | 820 | 810 | 804 | 753 | 784 | 753 | 11,318 | 11,169 | 11,157 |
| | Total | 2,677 | 3,260 | 3,882 | 4,749 | 5,468 | 5,940 | 44,918 | 54,918 | 65,264 |
| | Avg. Auto Occupancy | 1.00 | 1.11 | 1.24 | 1.00 | 1.07 | 1.15 | 1.04 | 1.15 | 1.28 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 1,275 | 1,311 | 1,279 |
| | HOV2 | 612 | 0 | 0 | 1,514 | 642 | 608 | 13,658 | 2,304 | 2,442 |
| | HOV3+ | 663 | 677 | 0 | 1,442 | 1,306 | 615 | 14,059 | 14,124 | 2,611 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 764 | 837 | 725 |
| | Total | 1,275 | 677 | 0 | 2,956 | 1,948 | 1,223 | 29,756 | 18,576 | 7,057 |
| | Avg. Auto Occupancy | 2.54 | 3.40 | 0.00 | 2.50 | 2.76 | 2.52 | 2.29 | 2.49 | 1.77 |
| All Lanes | SOV | 1,857 | 1,826 | 1,829 | 3,996 | 3,954 | 3,871 | 32,027 | 31,583 | 31,429 |
| | HOV2 | 612 | 624 | 596 | 1,514 | 1,372 | 1,326 | 15,090 | 14,522 | 14,364 |
| | HOV3+ | 663 | 677 | 653 | 1,442 | 1,306 | 1,214 | 15,477 | 15,382 | 14,647 |
| | CV | 820 | 810 | 804 | 753 | 784 | 753 | 12,083 | 12,006 | 11,882 |
| | Total | 3,952 | 3,937 | 3,882 | 7,705 | 7,416 | 7,164 | 74,677 | 73,493 | 72,322 |
| | Avg. Auto Occupancy | 1.24 | 1.25 | 1.24 | 1.30 | 1.28 | 1.27 | 1.33 | 1.33 | 1.32 |
| I-80 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,291 | 4,219 | 4,224 | 2,298 | 2,253 | 2,244 | 30,399 | 30,462 | 30,136 |
| | HOV2 | 0 | 244 | 240 | 0 | 602 | 598 | 1,326 | 8,684 | 7,944 |
| | HOV3+ | 0 | 0 | 218 | 0 | 0 | 530 | 1,353 | 1,486 | 7,555 |
| | CV | 856 | 856 | 849 | 753 | 742 | 738 | 11,517 | 11,606 | 11,357 |
| | Total | 5,147 | 5,319 | 5,531 | 3,051 | 3,597 | 4,110 | 44,595 | 52,238 | 56,992 |
| | Avg. Auto Occupancy | 1.00 | 1.02 | 1.05 | 1.00 | 1.09 | 1.20 | 1.04 | 1.12 | 1.20 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 2,095 | 1,712 | 2,080 |
| | HOV2 | 1,030 | 768 | 760 | 1,090 | 456 | 452 | 13,480 | 5,652 | 6,396 |
| | HOV3+ | 1,248 | 1,272 | 983 | 1,078 | 1,064 | 483 | 14,069 | 14,039 | 7,341 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 819 | 610 | 809 |
| | Total | 2,278 | 2,040 | 1,743 | 2,168 | 1,520 | 935 | 30,463 | 22,013 | 16,626 |
| | Avg. Auto Occupancy | 2.58 | 2.69 | 2.60 | 2.51 | 2.80 | 2.53 | 2.21 | 2.37 | 2.02 |
| All Lanes | SOV | 4,291 | 4,219 | 4,224 | 2,298 | 2,253 | 2,244 | 32,494 | 32,174 | 32,217 |
| | HOV2 | 1,030 | 1,012 | 1,000 | 1,090 | 1,058 | 1,050 | 14,806 | 14,334 | 14,340 |
| | HOV3+ | 1,248 | 1,272 | 1,204 | 1,078 | 1,064 | 1,017 | 15,422 | 15,524 | 14,895 |
| | CV | 856 | 856 | 849 | 753 | 742 | 738 | 12,336 | 12,216 | 12,166 |
| | Total | 7,425 | 7,359 | 7,277 | 5,219 | 5,117 | 5,049 | 75,058 | 74,248 | 73,618 |
| | Avg. Auto Occupancy | 1.23 | 1.24 | 1.23 | 1.33 | 1.33 | 1.33 | 1.32 | 1.32 | 1.32 |
| I-80 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 6,148 | 6,045 | 6,053 | 6,294 | 6,207 | 6,115 | 61,151 | 60,735 | 60,285 |
| | HOV2 | 0 | 868 | 836 | 0 | 1,332 | 1,316 | 2,756 | 20,902 | 19,866 |
| | HOV3+ | 0 | 0 | 870 | 0 | 0 | 1,129 | 2,771 | 2,744 | 19,591 |
| | CV | 1,676 | 1,666 | 1,653 | 1,506 | 1,526 | 1,491 | 22,835 | 22,775 | 22,514 |
| | Total | 7,824 | 8,579 | 9,412 | 7,800 | 9,065 | 10,051 | 89,513 | 107,156 | 122,256 |
| | Avg. Auto Occupancy | 1.00 | 1.05 | 1.12 | 1.00 | 1.08 | 1.17 | 1.04 | 1.13 | 1.24 |
| Managed Lanes | SOV | 0 | 0 | 0 | 0 | 0 | 0 | 3,370 | 3,023 | 3,359 |
| | HOV2 | 1,642 | 768 | 760 | 2,604 | 1,098 | 1,060 | 27,138 | 7,956 | 8,838 |
| | HOV3+ | 1,911 | 1,948 | 983 | 2,519 | 2,370 | 1,098 | 28,128 | 28,162 | 9,952 |
| | CV | 0 | 0 | 0 | 0 | 0 | 0 | 1,583 | 1,447 | 1,534 |
| | Total | 3,553 | 2,716 | 1,743 | 5,123 | 3,468 | 2,158 | 60,219 | 40,588 | 23,683 |
| | Avg. Auto Occupancy | 2.57 | 2.84 | 2.60 | 2.51 | 2.78 | 2.53 | 2.25 | 2.43 | 1.93 |
| All Lanes | SOV | 6,148 | 6,045 | 6,053 | 6,294 | 6,207 | 6,115 | 64,521 | 63,757 | 63,646 |
| | HOV2 | 1,642 | 1,636 | 1,596 | 2,604 | 2,430 | 2,376 | 29,896 | 28,856 | 28,704 |
| | HOV3+ | 1,911 | 1,948 | 1,856 | 2,519 | 2,370 | 2,230 | 30,899 | 30,906 | 29,543 |
| | CV | 1,676 | 1,666 | 1,653 | 1,506 | 1,526 | 1,491 | 24,419 | 24,222 | 24,048 |
| | Total | 11,377 | 11,295 | 11,158 | 12,923 | 12,533 | 12,212 | 149,735 | 147,741 | 145,941 |
| | Avg. Auto Occupancy | 1.24 | 1.24 | 1.23 | 1.31 | 1.30 | 1.29 | 1.33 | 1.33 | 1.32 |

Table 5: 2029 I-80/US 50 Person Trips

| US 50 EB at Sacramento River | | | | | | | | | | |
|---|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,502 | 4,247 | 4,050 | 5,695 | 5,267 | 5,018 | 60,223 | 56,016 | 53,891 |
| | HOV2 | 182 | 1,006 | 1,002 | 130 | 1,336 | 1,300 | 7,504 | 19,932 | 20,160 |
| | HOV3+ | 197 | 204 | 1,003 | 116 | 207 | 1,132 | 7,045 | 7,031 | 18,996 |
| | CV | 1,426 | 1,320 | 1,255 | 1,235 | 1,116 | 1,048 | 21,007 | 19,445 | 18,530 |
| | Total | 6,307 | 6,777 | 7,310 | 7,176 | 7,926 | 8,498 | 95,779 | 102,424 | 111,577 |
| | Avg. Auto Occupancy | 1.04 | 1.11 | 1.20 | 1.02 | 1.11 | 1.21 | 1.10 | 1.17 | 1.27 |
| Managed Lanes | SOV | 232 | 503 | 686 | 0 | 411 | 648 | 3,403 | 7,114 | 9,184 |
| | HOV2 | 1,570 | 632 | 656 | 2,242 | 816 | 920 | 24,886 | 10,832 | 10,904 |
| | HOV3+ | 1,676 | 1,737 | 799 | 2,169 | 2,268 | 932 | 25,007 | 26,540 | 11,665 |
| | CV | 74 | 179 | 240 | 0 | 114 | 182 | 2,140 | 3,454 | 4,367 |
| | Total | 3,552 | 3,051 | 2,381 | 4,411 | 3,609 | 2,682 | 55,436 | 47,940 | 36,120 |
| | Avg. Auto Occupancy | 2.24 | 2.02 | 1.60 | 2.51 | 2.26 | 1.71 | 2.19 | 2.02 | 1.61 |
| All Lanes | SOV | 4,734 | 4,750 | 4,736 | 5,695 | 5,678 | 5,666 | 63,626 | 63,130 | 63,075 |
| | HOV2 | 1,752 | 1,638 | 1,660 | 2,372 | 2,150 | 2,222 | 32,390 | 30,762 | 31,066 |
| | HOV3+ | 1,873 | 1,941 | 1,805 | 2,281 | 2,475 | 2,064 | 32,055 | 33,575 | 30,661 |
| | CV | 1,500 | 1,498 | 1,495 | 1,235 | 1,230 | 1,230 | 23,148 | 22,899 | 22,897 |
| | Total | 9,859 | 9,827 | 9,696 | 11,583 | 11,533 | 11,182 | 151,219 | 150,366 | 147,699 |
| | Avg. Auto Occupancy | 1.29 | 1.29 | 1.28 | 1.32 | 1.32 | 1.30 | 1.35 | 1.35 | 1.34 |
| US 50 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,674 | 4,469 | 4,328 | 5,086 | 4,758 | 4,570 | 56,109 | 52,508 | 50,850 |
| | HOV2 | 458 | 912 | 938 | 648 | 1,548 | 1,522 | 11,294 | 20,144 | 20,072 |
| | HOV3+ | 503 | 551 | 1,023 | 619 | 690 | 1,374 | 11,475 | 11,859 | 19,400 |
| | CV | 1,151 | 1,088 | 1,040 | 1,361 | 1,249 | 1,187 | 19,784 | 18,478 | 17,693 |
| | Total | 6,786 | 7,020 | 7,329 | 7,714 | 8,245 | 8,653 | 98,662 | 102,989 | 108,015 |
| | Avg. Auto Occupancy | 1.09 | 1.14 | 1.19 | 1.11 | 1.18 | 1.25 | 1.16 | 1.22 | 1.28 |
| Managed Lanes | SOV | 532 | 695 | 818 | 60 | 478 | 589 | 6,461 | 9,760 | 11,275 |
| | HOV2 | 1,030 | 436 | 446 | 2,026 | 836 | 874 | 20,508 | 10,242 | 10,354 |
| | HOV3+ | 1,153 | 1,248 | 551 | 1,904 | 1,822 | 850 | 19,938 | 20,546 | 10,690 |
| | CV | 173 | 225 | 265 | 21 | 163 | 194 | 3,122 | 4,309 | 4,991 |
| | Total | 2,888 | 2,604 | 2,080 | 4,011 | 3,299 | 2,507 | 50,029 | 44,857 | 37,310 |
| | Avg. Auto Occupancy | 1.85 | 1.73 | 1.42 | 2.43 | 2.07 | 1.71 | 1.95 | 1.78 | 1.52 |
| All Lanes | SOV | 5,205 | 5,164 | 5,147 | 5,146 | 5,236 | 5,159 | 62,571 | 62,268 | 62,125 |
| | HOV2 | 1,488 | 1,350 | 1,384 | 2,676 | 2,384 | 2,396 | 31,802 | 30,386 | 30,428 |
| | HOV3+ | 1,656 | 1,799 | 1,578 | 2,523 | 2,509 | 2,224 | 31,409 | 32,405 | 30,090 |
| | CV | 1,324 | 1,313 | 1,306 | 1,381 | 1,412 | 1,381 | 22,906 | 22,786 | 22,685 |
| | Total | 9,673 | 9,626 | 9,415 | 11,726 | 11,541 | 11,160 | 148,688 | 147,845 | 145,328 |
| | Avg. Auto Occupancy | 1.25 | 1.25 | 1.24 | 1.36 | 1.35 | 1.33 | 1.34 | 1.35 | 1.33 |
| US 50 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 9,176 | 8,716 | 8,378 | 10,781 | 10,025 | 9,588 | 116,332 | 108,524 | 104,741 |
| | HOV2 | 640 | 1,918 | 1,940 | 778 | 2,884 | 2,822 | 18,798 | 40,076 | 40,232 |
| | HOV3+ | 700 | 755 | 2,026 | 734 | 898 | 2,506 | 18,520 | 18,890 | 38,396 |
| | CV | 2,577 | 2,408 | 2,295 | 2,596 | 2,365 | 2,235 | 40,791 | 37,923 | 36,223 |
| | Total | 13,093 | 13,797 | 14,639 | 14,889 | 16,172 | 17,151 | 194,441 | 205,413 | 219,592 |
| | Avg. Auto Occupancy | 1.07 | 1.12 | 1.20 | 1.06 | 1.15 | 1.23 | 1.13 | 1.19 | 1.27 |
| Managed Lanes | SOV | 764 | 1,198 | 1,504 | 60 | 889 | 1,237 | 9,864 | 16,874 | 20,459 |
| | HOV2 | 2,600 | 1,068 | 1,102 | 4,268 | 1,652 | 1,794 | 45,394 | 21,074 | 21,258 |
| | HOV3+ | 2,829 | 2,985 | 1,350 | 4,073 | 4,090 | 1,782 | 44,945 | 47,087 | 22,355 |
| | CV | 247 | 404 | 505 | 21 | 277 | 376 | 5,262 | 7,763 | 9,358 |
| | Total | 6,440 | 5,655 | 4,461 | 8,422 | 6,908 | 5,189 | 105,465 | 92,798 | 73,430 |
| | Avg. Auto Occupancy | 2.05 | 1.88 | 1.51 | 2.47 | 2.16 | 1.71 | 2.07 | 1.89 | 1.56 |
| All Lanes | SOV | 9,939 | 9,914 | 9,883 | 10,841 | 10,914 | 10,825 | 126,197 | 125,398 | 125,200 |
| | HOV2 | 3,240 | 2,988 | 3,044 | 5,048 | 4,534 | 4,618 | 64,192 | 61,148 | 61,494 |
| | HOV3+ | 3,529 | 3,740 | 3,383 | 4,804 | 4,984 | 4,287 | 63,464 | 65,980 | 60,751 |
| | CV | 2,824 | 2,811 | 2,801 | 2,616 | 2,642 | 2,611 | 46,054 | 45,685 | 45,582 |
| | Total | 19,532 | 19,453 | 19,111 | 23,309 | 23,074 | 22,341 | 299,907 | 298,211 | 293,027 |
| | Avg. Auto Occupancy | 1.27 | 1.27 | 1.26 | 1.34 | 1.33 | 1.31 | 1.34 | 1.35 | 1.34 |

Table 6: 2049 I-80/US 50 Person Trips

| I-80 EB at Yolo Causeway | | | | | | | | | | |
|-------------------------------------|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,003 | 3,819 | 3,624 | 5,479 | 5,055 | 4,674 | 57,223 | 51,698 | 50,267 |
| | HOV2 | 0 | 692 | 708 | 0 | 1,164 | 1,166 | 2,950 | 19,048 | 17,350 |
| | HOV3+ | 0 | 0 | 745 | 0 | 0 | 1,105 | 3,142 | 4,502 | 17,221 |
| | CV | 1,030 | 962 | 916 | 980 | 924 | 851 | 17,237 | 15,440 | 15,124 |
| | Total | 5,033 | 5,473 | 5,993 | 6,459 | 7,143 | 7,796 | 80,552 | 90,688 | 99,962 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.17 | 1.00 | 1.09 | 1.21 | 1.05 | 1.16 | 1.26 |
| Managed Lanes | SOV | 440 | 631 | 749 | 0 | 158 | 513 | 3,800 | 7,706 | 9,160 |
| | HOV2 | 1,434 | 670 | 664 | 2,654 | 1,050 | 1,110 | 29,350 | 11,378 | 13,678 |
| | HOV3+ | 1,510 | 1,561 | 738 | 2,523 | 3,121 | 1,081 | 29,662 | 31,113 | 14,270 |
| | CV | 125 | 181 | 223 | 0 | 32 | 104 | 1,384 | 2,898 | 3,147 |
| | Total | 3,509 | 3,043 | 2,374 | 5,177 | 4,361 | 2,808 | 64,196 | 53,095 | 40,255 |
| | Avg. Auto Occupancy | 2.03 | 1.89 | 1.56 | 2.50 | 2.67 | 1.88 | 2.25 | 2.09 | 1.72 |
| All Lanes | SOV | 4,443 | 4,450 | 4,373 | 5,479 | 5,213 | 5,188 | 61,022 | 59,404 | 59,427 |
| | HOV2 | 1,434 | 1,362 | 1,374 | 2,654 | 2,214 | 2,276 | 32,300 | 30,426 | 31,028 |
| | HOV3+ | 1,510 | 1,561 | 1,482 | 2,523 | 3,125 | 2,186 | 32,803 | 35,615 | 31,491 |
| | CV | 1,155 | 1,143 | 1,139 | 980 | 956 | 955 | 18,621 | 18,338 | 18,271 |
| | Total | 8,542 | 8,516 | 8,368 | 11,636 | 11,508 | 10,605 | 144,746 | 143,783 | 140,217 |
| | Avg. Auto Occupancy | 1.26 | 1.26 | 1.26 | 1.36 | 1.40 | 1.34 | 1.37 | 1.39 | 1.37 |
| I-80 WB at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,820 | 4,470 | 4,136 | 5,112 | 4,604 | 4,411 | 58,618 | 55,279 | 50,747 |
| | HOV2 | 0 | 786 | 844 | 0 | 1,228 | 1,198 | 4,122 | 19,028 | 18,206 |
| | HOV3+ | 0 | 0 | 1,003 | 0 | 0 | 1,054 | 4,230 | 5,243 | 17,816 |
| | CV | 1,046 | 948 | 858 | 1,007 | 909 | 859 | 17,783 | 16,651 | 15,237 |
| | Total | 5,866 | 6,204 | 6,841 | 6,119 | 6,741 | 7,522 | 84,753 | 96,201 | 102,006 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.20 | 1.00 | 1.10 | 1.22 | 1.06 | 1.16 | 1.27 |
| Managed Lanes | SOV | 172 | 493 | 821 | 0 | 347 | 549 | 2,725 | 5,166 | 9,680 |
| | HOV2 | 1,570 | 556 | 600 | 2,618 | 1,100 | 1,140 | 28,626 | 11,880 | 13,262 |
| | HOV3+ | 2,033 | 2,210 | 809 | 2,411 | 2,533 | 1,071 | 28,645 | 28,992 | 13,709 |
| | CV | 48 | 135 | 225 | 0 | 76 | 122 | 1,028 | 1,902 | 3,244 |
| | Total | 3,823 | 3,394 | 2,455 | 5,029 | 4,056 | 2,882 | 61,024 | 47,940 | 39,895 |
| | Avg. Auto Occupancy | 2.39 | 2.18 | 1.55 | 2.49 | 2.36 | 1.85 | 2.30 | 2.23 | 1.69 |
| All Lanes | SOV | 4,992 | 4,963 | 4,957 | 5,112 | 4,951 | 4,960 | 61,344 | 60,445 | 60,427 |
| | HOV2 | 1,570 | 1,342 | 1,444 | 2,618 | 2,328 | 2,338 | 32,746 | 30,908 | 31,468 |
| | HOV3+ | 2,033 | 2,210 | 1,812 | 2,411 | 2,533 | 2,128 | 32,875 | 34,235 | 31,525 |
| | CV | 1,094 | 1,083 | 1,083 | 1,007 | 985 | 981 | 18,812 | 18,553 | 18,481 |
| | Total | 9,689 | 9,598 | 9,296 | 11,148 | 10,797 | 10,407 | 145,777 | 144,141 | 141,901 |
| | Avg. Auto Occupancy | 1.30 | 1.30 | 1.27 | 1.37 | 1.38 | 1.35 | 1.37 | 1.38 | 1.37 |
| I-80 Two-Way Total at Yolo Causeway | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 8,823 | 8,289 | 7,760 | 10,591 | 9,659 | 9,085 | 115,841 | 106,977 | 101,014 |
| | HOV2 | 0 | 1,478 | 1,552 | 0 | 2,392 | 2,364 | 7,072 | 38,076 | 35,556 |
| | HOV3+ | 0 | 0 | 1,748 | 0 | 0 | 2,159 | 7,371 | 9,744 | 35,037 |
| | CV | 2,076 | 1,910 | 1,774 | 1,987 | 1,833 | 1,710 | 35,020 | 32,091 | 30,361 |
| | Total | 10,899 | 11,677 | 12,834 | 12,578 | 13,884 | 15,318 | 165,304 | 186,888 | 201,968 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.19 | 1.00 | 1.09 | 1.21 | 1.06 | 1.16 | 1.27 |
| Managed Lanes | SOV | 612 | 1,124 | 1,570 | 0 | 505 | 1,062 | 6,525 | 12,872 | 18,840 |
| | HOV2 | 3,004 | 1,226 | 1,264 | 5,272 | 2,150 | 2,250 | 57,976 | 23,258 | 26,940 |
| | HOV3+ | 3,543 | 3,771 | 1,547 | 4,933 | 5,654 | 2,152 | 58,307 | 60,105 | 27,979 |
| | CV | 173 | 316 | 448 | 0 | 108 | 226 | 2,412 | 4,800 | 6,391 |
| | Total | 7,332 | 6,437 | 4,829 | 10,205 | 8,417 | 5,690 | 125,220 | 101,035 | 80,150 |
| | Avg. Auto Occupancy | 2.20 | 2.04 | 1.56 | 2.50 | 2.51 | 1.87 | 2.27 | 2.15 | 1.71 |
| All Lanes | SOV | 9,435 | 9,413 | 9,330 | 10,591 | 10,164 | 10,148 | 122,366 | 119,849 | 119,854 |
| | HOV2 | 3,004 | 2,704 | 2,818 | 5,272 | 4,542 | 4,614 | 65,046 | 61,334 | 62,496 |
| | HOV3+ | 3,543 | 3,771 | 3,295 | 4,933 | 5,658 | 4,315 | 65,678 | 69,850 | 63,016 |
| | CV | 2,249 | 2,226 | 2,222 | 1,987 | 1,941 | 1,936 | 37,433 | 36,891 | 36,752 |
| | Total | 18,231 | 18,114 | 17,665 | 22,783 | 22,305 | 21,013 | 290,523 | 287,924 | 282,118 |
| | Avg. Auto Occupancy | 1.28 | 1.28 | 1.27 | 1.37 | 1.39 | 1.34 | 1.37 | 1.38 | 1.37 |

Table 6: 2049 I-80/US 50 Person Trips

| I-80 EB at Sacramento River | | | | | | | | | | |
|--|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 2,508 | 2,466 | 2,335 | 4,632 | 4,092 | 3,807 | 37,074 | 35,357 | 34,207 |
| | HOV2 | 0 | 462 | 472 | 0 | 964 | 896 | 1,844 | 10,948 | 10,774 |
| | HOV3+ | 0 | 0 | 551 | 0 | 0 | 806 | 1,880 | 1,724 | 10,720 |
| | CV | 894 | 887 | 859 | 805 | 720 | 659 | 12,891 | 12,575 | 12,211 |
| | Total | 3,402 | 3,815 | 4,217 | 5,437 | 5,776 | 6,168 | 53,689 | 60,604 | 67,912 |
| | Avg. Auto Occupancy | 1.00 | 1.06 | 1.17 | 1.00 | 1.09 | 1.20 | 1.04 | 1.12 | 1.24 |
| Managed Lanes | SOV | 0 | 0 | 64 | 100 | 547 | 730 | 1,621 | 2,549 | 3,249 |
| | HOV2 | 810 | 328 | 342 | 1,946 | 792 | 758 | 17,242 | 7,182 | 7,320 |
| | HOV3+ | 955 | 1,040 | 466 | 1,904 | 1,761 | 813 | 18,265 | 18,387 | 8,398 |
| | CV | 0 | 0 | 22 | 23 | 131 | 182 | 850 | 1,085 | 1,307 |
| | Total | 1,765 | 1,368 | 894 | 3,973 | 3,231 | 2,483 | 37,978 | 29,203 | 20,274 |
| | Avg. Auto Occupancy | 2.57 | 2.91 | 2.27 | 2.40 | 2.03 | 1.62 | 2.31 | 2.31 | 1.90 |
| All Lanes | SOV | 2,508 | 2,466 | 2,399 | 4,732 | 4,639 | 4,538 | 38,694 | 37,906 | 37,456 |
| | HOV2 | 810 | 790 | 814 | 1,946 | 1,756 | 1,652 | 19,084 | 18,130 | 18,094 |
| | HOV3+ | 955 | 1,040 | 1,017 | 1,904 | 1,761 | 1,618 | 20,145 | 20,114 | 19,118 |
| | CV | 894 | 887 | 881 | 828 | 851 | 840 | 13,741 | 13,660 | 13,519 |
| | Total | 5,167 | 5,183 | 5,111 | 9,410 | 9,007 | 8,648 | 91,664 | 89,810 | 88,187 |
| | Avg. Auto Occupancy | 1.26 | 1.28 | 1.28 | 1.33 | 1.31 | 1.29 | 1.35 | 1.35 | 1.34 |
| I-80 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 4,516 | 4,287 | 4,099 | 2,989 | 2,792 | 2,631 | 36,438 | 35,229 | 34,204 |
| | HOV2 | 0 | 706 | 728 | 0 | 822 | 808 | 1,800 | 11,064 | 10,778 |
| | HOV3+ | 0 | 0 | 772 | 0 | 0 | 758 | 1,884 | 1,843 | 11,084 |
| | CV | 808 | 774 | 715 | 842 | 787 | 733 | 13,000 | 12,700 | 12,303 |
| | Total | 5,324 | 5,767 | 6,314 | 3,831 | 4,401 | 4,930 | 53,122 | 60,836 | 68,369 |
| | Avg. Auto Occupancy | 1.00 | 1.07 | 1.17 | 1.00 | 1.10 | 1.24 | 1.04 | 1.13 | 1.24 |
| Managed Lanes | SOV | 426 | 670 | 833 | 0 | 114 | 255 | 2,956 | 3,632 | 4,375 |
| | HOV2 | 1,394 | 476 | 500 | 1,480 | 598 | 580 | 16,956 | 6,722 | 7,148 |
| | HOV3+ | 1,700 | 1,574 | 745 | 1,479 | 1,530 | 639 | 18,469 | 18,717 | 8,524 |
| | CV | 104 | 169 | 217 | 0 | 42 | 92 | 1,078 | 1,286 | 1,520 |
| | Total | 3,624 | 2,889 | 2,295 | 2,959 | 2,284 | 1,566 | 39,459 | 30,357 | 21,567 |
| | Avg. Auto Occupancy | 2.10 | 1.88 | 1.51 | 2.52 | 2.52 | 1.90 | 2.20 | 2.20 | 1.80 |
| All Lanes | SOV | 4,941 | 4,957 | 4,931 | 2,989 | 2,906 | 2,886 | 39,394 | 38,861 | 38,579 |
| | HOV2 | 1,394 | 1,182 | 1,228 | 1,480 | 1,420 | 1,388 | 18,758 | 17,786 | 17,926 |
| | HOV3+ | 1,700 | 1,574 | 1,520 | 1,479 | 1,530 | 1,397 | 20,352 | 20,560 | 19,611 |
| | CV | 912 | 943 | 932 | 842 | 829 | 824 | 14,078 | 13,985 | 13,823 |
| | Total | 8,947 | 8,656 | 8,611 | 6,790 | 6,685 | 6,495 | 92,582 | 91,192 | 89,939 |
| | Avg. Auto Occupancy | 1.27 | 1.24 | 1.24 | 1.36 | 1.37 | 1.35 | 1.34 | 1.35 | 1.34 |
| I-80 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 7,024 | 6,753 | 6,434 | 7,621 | 6,884 | 6,438 | 73,512 | 70,586 | 68,411 |
| | HOV2 | 0 | 1,168 | 1,200 | 0 | 1,786 | 1,704 | 3,644 | 22,012 | 21,552 |
| | HOV3+ | 0 | 0 | 1,323 | 0 | 0 | 1,564 | 3,764 | 3,567 | 21,804 |
| | CV | 1,702 | 1,661 | 1,574 | 1,647 | 1,507 | 1,392 | 25,891 | 25,275 | 24,514 |
| | Total | 8,726 | 9,582 | 10,531 | 9,268 | 10,177 | 11,098 | 106,811 | 121,440 | 136,281 |
| | Avg. Auto Occupancy | 1.00 | 1.06 | 1.17 | 1.00 | 1.10 | 1.21 | 1.04 | 1.13 | 1.24 |
| Managed Lanes | SOV | 426 | 670 | 897 | 100 | 661 | 985 | 4,577 | 6,181 | 7,624 |
| | HOV2 | 2,204 | 804 | 842 | 3,426 | 1,390 | 1,338 | 34,198 | 13,904 | 14,468 |
| | HOV3+ | 2,655 | 2,615 | 1,210 | 3,383 | 3,291 | 1,452 | 36,734 | 37,104 | 16,922 |
| | CV | 104 | 169 | 239 | 23 | 173 | 274 | 1,928 | 2,371 | 2,827 |
| | Total | 5,389 | 4,258 | 3,188 | 6,932 | 5,515 | 4,049 | 77,437 | 59,560 | 41,841 |
| | Avg. Auto Occupancy | 2.23 | 2.12 | 1.67 | 2.45 | 2.21 | 1.72 | 2.25 | 2.25 | 1.85 |
| All Lanes | SOV | 7,449 | 7,423 | 7,330 | 7,721 | 7,545 | 7,424 | 78,088 | 76,767 | 76,035 |
| | HOV2 | 2,204 | 1,972 | 2,042 | 3,426 | 3,176 | 3,040 | 37,842 | 35,916 | 36,020 |
| | HOV3+ | 2,655 | 2,615 | 2,536 | 3,383 | 3,291 | 3,016 | 40,497 | 40,674 | 38,729 |
| | CV | 1,806 | 1,830 | 1,813 | 1,670 | 1,680 | 1,664 | 27,819 | 27,645 | 27,342 |
| | Total | 14,114 | 13,840 | 13,721 | 16,200 | 15,692 | 15,144 | 184,246 | 181,002 | 178,126 |
| | Avg. Auto Occupancy | 1.27 | 1.26 | 1.26 | 1.34 | 1.33 | 1.32 | 1.35 | 1.35 | 1.34 |

Table 6: 2049 I-80/US 50 Person Trips

| US 50 EB at Sacramento River | | | | | | | | | | |
|---|---------------------|--------------|--------|--------|--------------|--------|--------|---------|---------|---------|
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 5,348 | 5,219 | 4,927 | 6,501 | 6,248 | 5,752 | 68,601 | 64,625 | 62,341 |
| | HOV2 | 84 | 1,064 | 1,110 | 148 | 1,514 | 1,460 | 8,446 | 23,910 | 22,504 |
| | HOV3+ | 92 | 44 | 1,149 | 122 | 3 | 1,289 | 7,677 | 7,524 | 21,512 |
| | CV | 1,627 | 1,579 | 1,444 | 1,303 | 1,232 | 1,135 | 24,195 | 22,452 | 21,406 |
| | Total | 7,151 | 7,906 | 8,630 | 8,074 | 8,997 | 9,636 | 108,919 | 118,511 | 127,763 |
| | Avg. Auto Occupancy | 1.02 | 1.08 | 1.19 | 1.02 | 1.09 | 1.21 | 1.10 | 1.17 | 1.26 |
| Managed Lanes | SOV | 0 | 203 | 558 | 0 | 0 | 535 | 3,227 | 5,900 | 8,834 |
| | HOV2 | 2,360 | 942 | 930 | 2,814 | 804 | 1,162 | 30,424 | 11,352 | 14,048 |
| | HOV3+ | 2,710 | 2,842 | 1,224 | 2,788 | 3,995 | 1,265 | 31,868 | 37,832 | 16,177 |
| | CV | 0 | 75 | 216 | 0 | 0 | 149 | 1,927 | 3,335 | 4,429 |
| | Total | 5,070 | 4,062 | 2,928 | 5,602 | 4,799 | 3,111 | 67,446 | 58,419 | 43,488 |
| | Avg. Auto Occupancy | 2.56 | 2.56 | 1.83 | 2.52 | 3.04 | 1.90 | 2.27 | 2.24 | 1.74 |
| All Lanes | SOV | 5,348 | 5,422 | 5,485 | 6,501 | 6,248 | 6,287 | 71,828 | 70,524 | 71,175 |
| | HOV2 | 2,444 | 2,006 | 2,040 | 2,962 | 2,320 | 2,622 | 38,870 | 35,264 | 36,552 |
| | HOV3+ | 2,802 | 2,887 | 2,373 | 2,910 | 3,998 | 2,553 | 39,545 | 45,356 | 37,689 |
| | CV | 1,627 | 1,654 | 1,660 | 1,303 | 1,232 | 1,284 | 26,122 | 25,788 | 25,834 |
| | Total | 12,221 | 11,969 | 11,558 | 13,676 | 13,798 | 12,746 | 176,365 | 176,932 | 171,250 |
| | Avg. Auto Occupancy | 1.35 | 1.34 | 1.30 | 1.35 | 1.41 | 1.32 | 1.37 | 1.39 | 1.36 |
| US 50 WB at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 5,572 | 5,345 | 5,096 | 5,709 | 5,321 | 5,169 | 65,167 | 62,027 | 60,305 |
| | HOV2 | 616 | 1,072 | 1,174 | 906 | 1,758 | 1,798 | 15,724 | 24,436 | 24,342 |
| | HOV3+ | 721 | 843 | 1,312 | 921 | 1,098 | 1,737 | 16,235 | 17,935 | 24,422 |
| | CV | 1,279 | 1,215 | 1,165 | 1,473 | 1,354 | 1,298 | 23,711 | 22,473 | 21,775 |
| | Total | 8,188 | 8,475 | 8,747 | 9,009 | 9,531 | 10,002 | 120,837 | 126,871 | 130,844 |
| | Avg. Auto Occupancy | 1.11 | 1.15 | 1.21 | 1.14 | 1.21 | 1.27 | 1.19 | 1.24 | 1.29 |
| Managed Lanes | SOV | 504 | 699 | 850 | 0 | 356 | 560 | 6,712 | 9,534 | 11,466 |
| | HOV2 | 1,130 | 438 | 440 | 2,382 | 968 | 950 | 22,940 | 11,290 | 11,990 |
| | HOV3+ | 1,380 | 1,527 | 602 | 2,326 | 2,207 | 928 | 23,062 | 23,423 | 12,679 |
| | CV | 148 | 197 | 248 | 0 | 122 | 190 | 3,074 | 4,208 | 4,925 |
| | Total | 3,162 | 2,861 | 2,140 | 4,708 | 3,653 | 2,628 | 55,788 | 48,455 | 41,060 |
| | Avg. Auto Occupancy | 1.95 | 1.83 | 1.43 | 2.51 | 2.27 | 1.75 | 1.99 | 1.84 | 1.57 |
| All Lanes | SOV | 6,075 | 6,045 | 5,945 | 5,709 | 5,677 | 5,729 | 71,878 | 71,561 | 71,771 |
| | HOV2 | 1,746 | 1,510 | 1,614 | 3,288 | 2,726 | 2,750 | 38,664 | 35,726 | 36,330 |
| | HOV3+ | 2,101 | 2,370 | 1,914 | 3,247 | 3,301 | 2,666 | 39,297 | 41,358 | 37,101 |
| | CV | 1,427 | 1,412 | 1,413 | 1,473 | 1,475 | 1,488 | 26,784 | 26,681 | 26,700 |
| | Total | 11,349 | 11,337 | 10,886 | 13,717 | 13,179 | 12,633 | 176,623 | 175,326 | 171,902 |
| | Avg. Auto Occupancy | 1.26 | 1.27 | 1.25 | 1.40 | 1.39 | 1.35 | 1.36 | 1.37 | 1.35 |
| US 50 Two-Way Total at Sacramento River | | | | | | | | | | |
| Lane Type | Vehicle Type | AM Peak Hour | | | PM Peak Hour | | | Daily | | |
| | | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll | HOT 2 | HOT 3+ | Toll |
| General Purpose Lanes | SOV | 10,920 | 10,564 | 10,023 | 12,210 | 11,569 | 10,921 | 133,768 | 126,652 | 122,646 |
| | HOV2 | 700 | 2,136 | 2,284 | 1,054 | 3,272 | 3,258 | 24,170 | 48,346 | 46,846 |
| | HOV3+ | 813 | 887 | 2,462 | 1,044 | 1,102 | 3,026 | 23,912 | 25,459 | 45,934 |
| | CV | 2,906 | 2,794 | 2,609 | 2,776 | 2,586 | 2,433 | 47,906 | 44,925 | 43,181 |
| | Total | 15,339 | 16,381 | 17,378 | 17,084 | 18,529 | 19,638 | 229,756 | 245,382 | 258,607 |
| | Avg. Auto Occupancy | 1.06 | 1.12 | 1.20 | 1.08 | 1.15 | 1.24 | 1.14 | 1.21 | 1.28 |
| Managed Lanes | SOV | 504 | 902 | 1,408 | 0 | 356 | 1,095 | 9,939 | 15,434 | 20,300 |
| | HOV2 | 3,490 | 1,380 | 1,370 | 5,196 | 1,772 | 2,112 | 53,364 | 22,642 | 26,038 |
| | HOV3+ | 4,090 | 4,369 | 1,826 | 5,114 | 6,202 | 2,193 | 54,930 | 61,254 | 28,856 |
| | CV | 148 | 272 | 464 | 0 | 122 | 339 | 5,001 | 7,543 | 9,354 |
| | Total | 8,232 | 6,923 | 5,068 | 10,310 | 8,452 | 5,739 | 123,234 | 106,873 | 84,548 |
| | Avg. Auto Occupancy | 2.29 | 2.20 | 1.64 | 2.51 | 2.65 | 1.83 | 2.13 | 2.04 | 1.65 |
| All Lanes | SOV | 11,423 | 11,467 | 11,430 | 12,210 | 11,925 | 12,016 | 143,706 | 142,085 | 142,946 |
| | HOV2 | 4,190 | 3,516 | 3,654 | 6,250 | 5,046 | 5,372 | 77,534 | 70,990 | 72,882 |
| | HOV3+ | 4,903 | 5,256 | 4,287 | 6,157 | 7,300 | 5,219 | 78,843 | 86,714 | 74,790 |
| | CV | 3,054 | 3,066 | 3,073 | 2,776 | 2,707 | 2,772 | 52,906 | 52,469 | 52,534 |
| | Total | 23,570 | 23,305 | 22,444 | 27,393 | 26,978 | 25,379 | 352,989 | 352,258 | 343,152 |
| | Avg. Auto Occupancy | 1.31 | 1.31 | 1.28 | 1.38 | 1.40 | 1.34 | 1.37 | 1.38 | 1.35 |